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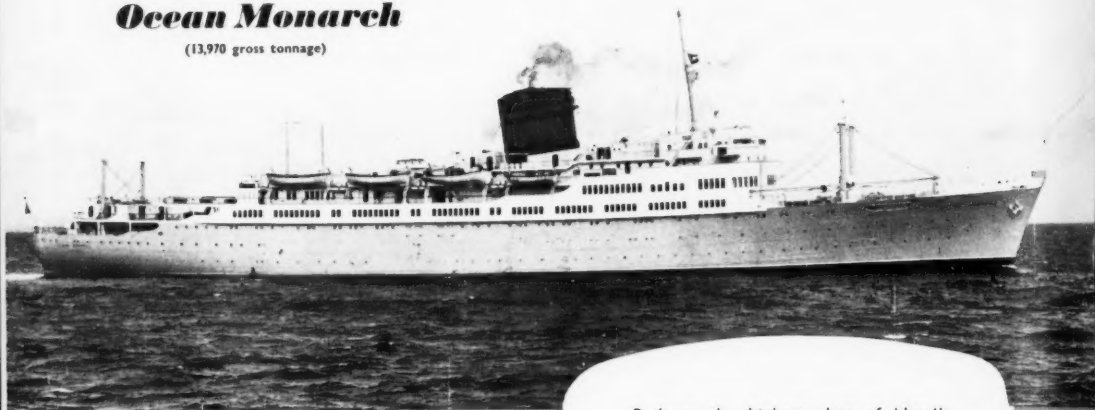
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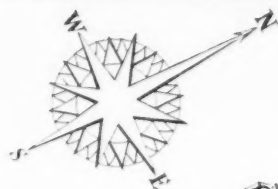
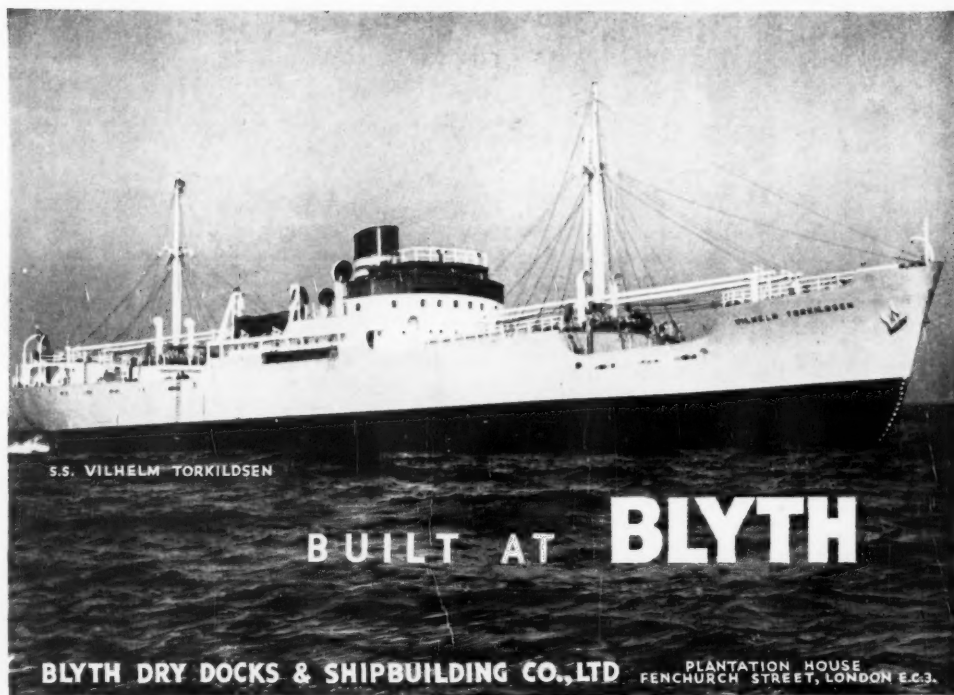


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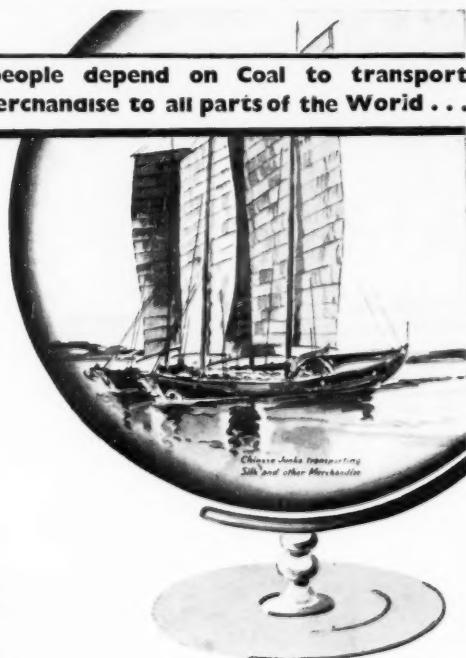
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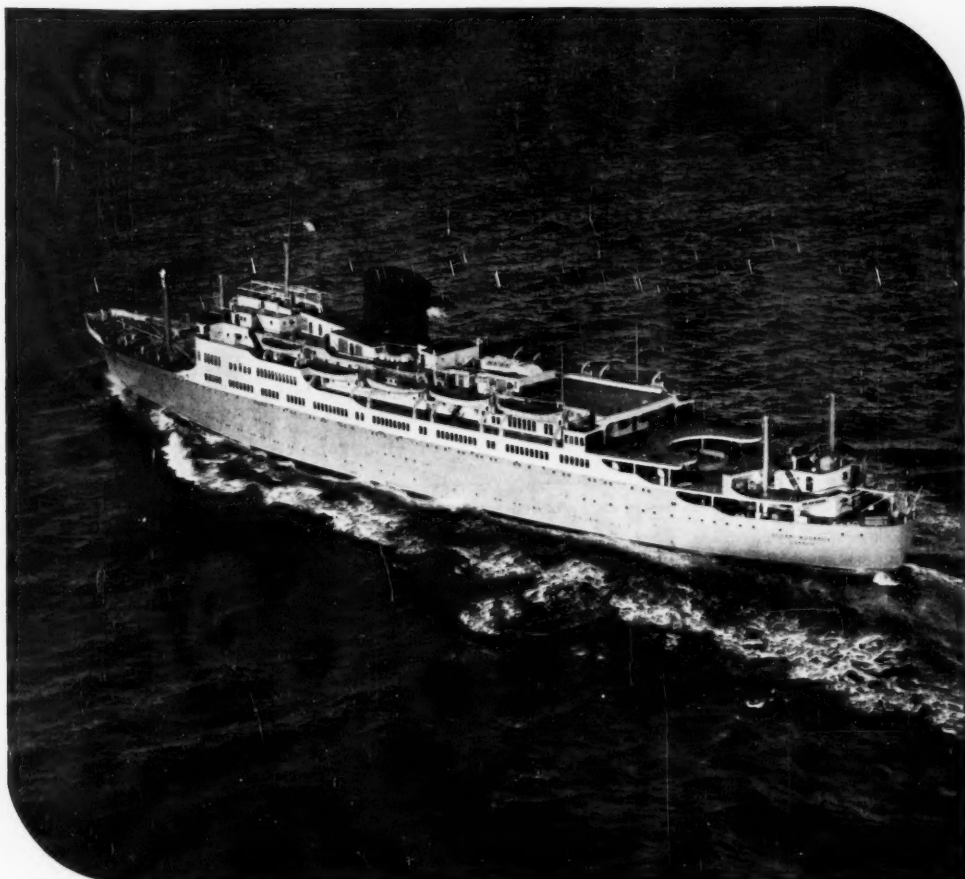
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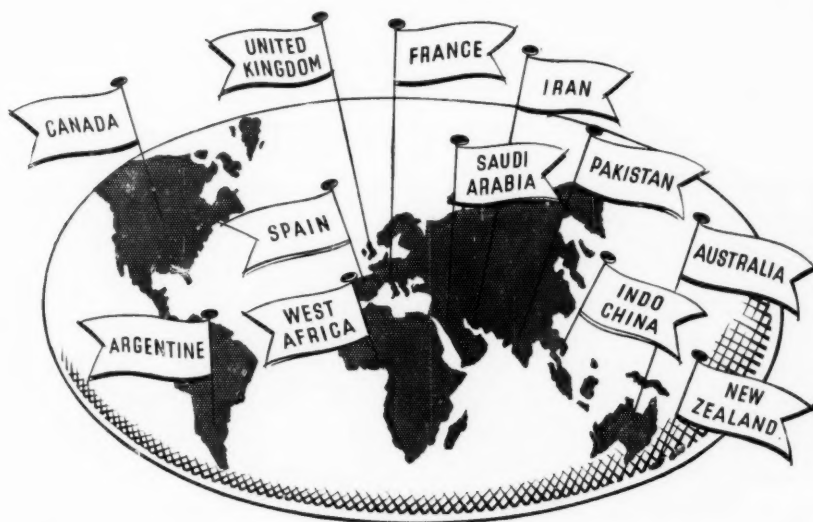
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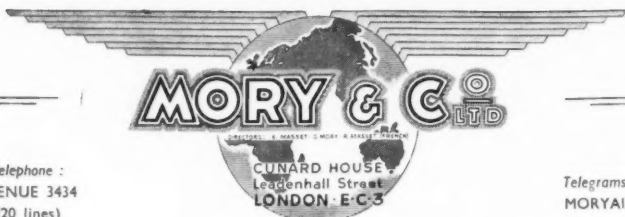


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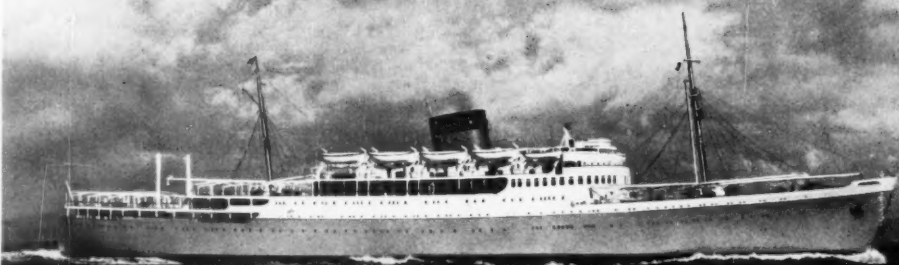
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THE SHIPPING WORLD

"A COLD WIND"

"A COLD wind will be blowing through the western world for the next year or two and nowhere will the blast be more chilly than in these islands." Those words by Sir William Rooses, one of this country's most farseeing industrial leaders, are a warning to Ministers of the Crown, managements and workers, whether working with brain or hand, that industrial disputes must be avoided and that everyone, politicians, industrialists and trade union leaders, must cooperate in a spirit of goodwill if the cold wind is to be followed by warm breezes in which we can all bask once again. We are confronted with a more serious economic crisis than at any time in our history. We could not have been forced at a more untimely juncture to carry out the costly rearmament programme which Mr. Attlee's Government adopted and which Parliament has endorsed. The situation was admirably summed up by Sir John Thornycroft a short time ago. "The present indications are that shortage of material and lack of adequate labour force, brought about by superimposing rearmament upon normal domestic and export business, and past mismanagement of the national finances and Government bulk buying, will have a very serious effect on reducing turnover and increasing costs." Another appropriate quotation is from *The Economist*. "An alarming inflation of wage costs has taken grip of the British economy. It is a grip that must by some means be shaken off."

The maritime industries are likely, in due course, to feel the cold wind as badly as any. The managements have to plan years ahead, with the aid of all their expert knowledge and ripe experience. Shipping, and especially the tramp section of the industry, is earning at present high freights; in the shipyards, and especially the larger ones, every berth will be occupied for two or three years, which means that heavy demands will be made on all the ancillary industries concerned with equipment as well as by those which are associated with the supply of what may be described as the raw materials from which ships are created. Progress in shipyards, engine shops and factories may be retarded by shortages of materials, and especially of steel, even if plenty of skilled labour is available.

"Productivity"—that blessed euphemistic word, must be increased.

For that reason, it is matter of satisfaction that the Prime Minister and his colleagues are endeavouring to prove to trade unionists that they are working not as narrow minded politicians, pursuing party ends, but are anxious to enlist the support of all classes, managements, wage earners and, not least, investors, for owing to the reaction of the fall in the pound sterling on the problems of plant renewal, including ships, and stock maintenance, many companies in the maritime group will find it impossible to carry on without fresh "risk capital." As an example of the attitude of Ministers towards all the complicated problems in the industrial field, we have the decision to endeavour to come to terms with the leaders of the trade unions on the future of the steel industry. The prospect of the present Government denationalising steel in face of the threat that their successors in office will nationalise it again, is not a cheerful one for such large consumers of steel as shipbuilders, marine engineers and equipment makers. It is unlikely that the sponsors of nationalisation will admit that they made a mistake in setting up the Steel Corporation, but those most intimately concerned with the matter, the rank and file of trade unionists in the industry, may be brought to see that the solution is to be found halfway between nationalisation and unrestricted private enterprise.

It is anticipated that the new Steel Bill will set up an Iron and Steel Board with extensive control over both the nationalised and privately owned firms. And in that connection, it may be interjected that unrestricted private enterprise, which meant keen competition, made this one of the greatest steel producing countries of the world, which exported its products of such high quality and at such tempting prices as to help to a great extent in balancing the national trading account. Now we may hope that goodwill and good sense will triumph and that a new Steel Board will be set up with the concurrence of all immediately concerned. If we are to get to "the end of the trail" with credit to ourselves, we must all work together, letting the world know that we are not down and out.

Current Events

Free Enterprise in Civil Aviation

Now that the duties formerly performed by the Minister of Civil Aviation have devolved on the Minister of Transport, Mr. John Maclay, the air transport industry may be justified in entertaining hopes that an early start will be made in clearing away some of the needless restrictions which have been crippling the development of air chartering business. Since the change of Government, the British Independent Air Transport Association has formulated its policy with

regard to the immediate future, as fully reported on another page. Its principal object will be to achieve the restoration of a wide measure of freedom for private enterprise by revision of the Acts of 1949, which went a long way towards eliminating free enterprise in air transport. Revision of these Acts would, of course, require new legislation, which doubtless would be relentlessly opposed by Socialist M.P.s, but, meanwhile, the existing Acts can be interpreted more generously towards private enterprise, particularly in the field of

charter work and the management of airfields. Mr. Maclay, with his long experience in the shipping industry—and shipping, it must be remembered, is the complement of air transport and has had valuable experience in the early development of airlines—can be relied on to assist the air transport industry to exercise private enterprise to the utmost. Lord Leathers, Secretary of State for the Coordination of Transport, Fuel and Power, made it quite clear in the House of Lords that he favoured a combination of public and private enterprise in the best interests of British civil aviation. It was the Government's intention, he said, "to give greater opportunities to private enterprise to take part in air transport development, without in any way impairing the competitive strength of our international air services." Many shipping companies which took air powers in the early stages of civil aviation may, in the long run, find scope after all for cooperation with the remaining independent operators, and their assistance would do much to promote business; and perhaps the position of the Baltic Exchange as the world centre of air chartering, as well as ship chartering, will after all be finally established.

Rules and Exceptions

THE SECOND READING of the new Merchant Shipping Bill gave one or two Members of Parliament an opportunity of displaying their complete ignorance of shipping affairs. The object of the Bill, as Mr. Maclay explained, was to enable him as Minister of Transport to make exceptions from certain requirements as to crew accommodation in ships proposed in the Merchant Shipping Acts of 1948 and 1950. This sounded suspicious to one or two Socialists eager to make political capital, but they soon discovered that they were chasing a non-existent hare. The seafarers themselves had already indicated their full approval of this measure. In fact, as Mr. Maclay explained, paradoxical though it may sound, it was absolutely essential to have power to exempt certain ships from these regulations if the highest average standard throughout the merchant fleet was to be achieved. The regulations which are now being drafted in accordance with the 1948 Act will provide for standards of crew accommodation in British ships rather higher than those laid down in I.L.O. Maritime Conventions of 1946 and 1949, but it is not practically possible for all vessels, without exception, to adhere to these high standards completely. The choice was whether the Minister should have power to exempt certain ships from the high standards that the majority would have to follow, or whether those high standards should be lowered to the general level at which no exemptions would be necessary. Needless to say, the latter alternative did not appeal to either side of the National Maritime Board. Hence the new Merchant Shipping Bill, which had the full approval of Mr. Alfred Barnes, Mr. Maclay's predecessor. As Mr. Barnes put it, "it was essential not to make the standardised conditions so rigid, comprehensive and complete that they ruled out the creative type of enterprise which is always seeking to go one better." This is an excellent example of a case when the value of the rule is improved by the exception. Too often in these regulation-ridden days, masses of time, energy and paper are wasted on striving after complete uniformity, often with the result that general standards are lowered.

"Scab Ships"

In commenting on the discussion in the House of Commons of the danger of Japanese competition and the revelations which were made by some M.P.s as to undercutting by the people who are now being given freedom in production and trading, Mr. George Schwartz, the economist, made an assertion which may deceive shallow thinkers. In the *Sunday Times* he wrote that "the *Queen Mary* and *Queen Elizabeth* are two scab ships operated by cheap labour." He added that that was the sort of remark that could be uttered in

American maritime circles, "for it cannot be denied that by United States and Canadian standards we are a country with a lower standard of living. All the arguments against Asiatic products could be employed against European products by American employers and workers." What, in fact, matters to us in Britain is not the conditions under which Japanese goods are produced, but the prices at which they are sold in overseas markets, competing with our products and, in many cases, copied from our designs. What so many people do not realise is that manufacturers and ship-owners in the United States command a home market, which is protected by tariffs, subsidies and other devices, with three times the population of the British Isles, and that they have easy access to contiguous markets stretching from the North Pole to Cape Horn. Having many millions of people to supply, the Americans can adopt the methods of mass production of cars, typewriters, vacuum cleaners and other things. They can make practically everything in this cheap way—except ships. They applied the mass production technique to ships during the war with surprising and welcome results. But when victory had been won it became apparent that they were not comparable to the quality ships which are turned out by British shipyards.

Motor Cars and Ships

PRACTICALLY every shipowner in the United Kingdom who acquired such mass produced ships desires as soon as possible to replace them by vessels "made to measure", as a tailor might say. Clothes "off the peg" are relatively cheap in these islands, but those who can afford higher prices for clothes made to measure buy such clothes. The suggestion that the two *Queens* or any other British ships are "scab ships" is as appropriate as it would be to call American motor cars, typewriters and other mass produced articles which are sold all over the world at low prices as "scab." It is the price that is of importance in all these trade matters. That the car manufacturers on the other side of the Atlantic, owing to their very favourable conditions of production, can sell their motor cars cheaper than we can sell our cars causes no protest from our makers. So in the matter of ships. We live in a small and overcrowded island, which means that we must have ships in order to import about half our food and nearly all our raw materials, and export sufficient goods and services in order to pay for those imports. So far as shipbuilding and ship operating are concerned, we are favourably situated because we must have ships to live. The talk of "scab ships" is unjust to all our maritime industries, especially as the workers in this country, owing to lower prices, are in all essential respects as well off as those of the United States. If higher wages prevail in that country, as they do, so higher prices for everything are the rule.

Shipbuilding Results

THE LATEST results of Yarrow & Co., Ltd., and of the Fairfield Shipbuilding & Engineering Co., Ltd., underline the great strength of financial resources at the disposal of the shipbuilding industry. At the end of June 1951, Yarrow had accumulated in reserves as much as £695,000 (excluding future tax and pension provisions totalling £188,000), compared with an issued one-class capital of £300,000. The latest balance sheet of Fairfield totals £3,835,000. Here, too, fixed assets, at £798,000, are substantially depreciated, while current assets of £2,783,000 include £800,000 in cash and £270,000 in tax certificates. There is thus ample provision for capital commitments of £185,000. Issued capital of £500,000 is in equal moieties of preference and ordinary shares and is backed by reserves totalling £1,673,000. The contrasting trading experience of the two companies stresses the sharp fluctuation in earnings to which all long-term contractors are prone. In the case of Yarrow, consolidated trading profits rose from £236,000 to £377,000. The dividend of 15 per

cent less tax on a capital recently doubled by a reserves capitalisation of £150,000 was nearly four times covered. Fairfield reports considerably lower trading profits of £168,000 (against £701,000), but the net surplus of £130,000, after depreciation of £100,000 and tax of £176,000 (against £310,500), many times covers the repeated 10 per cent dividend.

Higher Freights

THE books of the Stag Line close on October 31, so that the company has had the advantage of ten months of the profitable operations that have characterised the current year. In consequence, trading results have yielded £436,000, compared with £148,000 in 1949-50. Tax, of course, skims the cream off this achievement, taking £174,000 (against £31,000), while the depreciation charge is raised from £79,300 to £143,000. Nevertheless, the dividend of 15 per cent against 12½ per cent is left with generous cover. A centenary bonus of 3d. per share (tax free) is also being paid. The 15 per cent dividend costs no more than £16,000 net and the surplus of £114,000 goes to a further strengthening of reserves and the carry forward. Reserves and provisions, including a tax account of £238,000, now total £1,241,000 or more than six times the issued one-class capital of £206,000. At the same time the liquid position has greatly improved. Whereas there was a small bank loan outstanding at October 31, 1950, the company now holds £448,000 in cash and £150,000 in tax certificates. In addition, there is an investment portfolio of £364,000. Part of the accrual of liquid resources during the year comes from the sale, at "an attractive" price, of the *Iria* but the very satisfactory trading results mentioned in the directors' report will also have played their part in the building up of a very adequate working capital.

Training and Education for Management

A GREAT deal has been said, in Parliament and elsewhere during recent weeks, regarding the economic state of the country. The incidence of a great rearmament campaign has successfully hidden the fact that if a peace move should succeed, the return to normal conditions would be within a buyers' market. For this reason we must continually plan for more efficient and greater production, being a country largely dependent on export trade. The report of the Anglo-American Council on Productivity dealing with education for management is, therefore, of special interest. No attempt is made to review conditions in the United Kingdom, but the findings on American practice are most revealing. Perhaps the most significant comment is that "there is a climate of opinion which regards maximum effort by every individual as the primary guarantee not only of material standards but of the way of life of a free society." The creation of a similar attitude in Britain is not a matter for industry alone; politicians of all colours, as well as trade unions, must play their part. A matter which should receive immediate attention by industrial leaders, not least those in the maritime industries, is the emphasis on higher education in the United States. Over two million people are receiving university education. More degrees are granted in business and commerce subjects than any other. Great stress is placed on the integration of theory and practice in education for business. As distinct from this progressive trend, the position in the maritime industries of Britain is, in some senses, quite alarming. It is doubtful if a single student is now being taught maritime affairs as a whole. As distinct from Norway, there is in Britain no chair of maritime affairs, a position which is indefensible in the greatest shipping and shipbuilding nation in the world.

The Riveting and Welding of Aluminium

THE shipbuilding and marine engineering industries have welcomed the symposium arranged by the Aluminium Development Association in London in

November, where papers on the riveting and welding of aluminium were read, followed by useful discussions. The basic needs of these sections of the maritime industries are guidance on approved methods of riveting, together with an assurance that all possible progress is being made in the development of light alloy welding. The latter is necessary at a time when almost all British shipyards are following a policy of ever greater introduction of welded construction in their yards. The incidental fact that it is becoming increasingly difficult to attract young entrants to the riveting trade is not without a bearing on future developments in marine use of aluminium. In the first paper by P. T. Houlderfort, W. G. Hull and H. G. Taylor, it was made clear that, with the advent of the argon arc and self-adjusting arc processes, there was now practically no restriction on the type of joint to be employed, while fabrication procedure had been simplified. The latter and more recently developed method had more versatility than the former, but it was thought that for plating up to about ½ in. thickness argon arc welding was more suited and gave a higher quality weld. In the second paper, dealing with argon arc welding, by J. R. Handforth, it was stated that the process gave weld strengths of from 90 to 95 per cent of the original metal, as compared with about 70 per cent strengths when using acetylene or flux-coated electrodes. Two further papers dealing with aluminium rivets and riveted joints, by J. C. Bailey and Prof. S. C. Redshaw, showed that the main principles upon which light alloy riveting should be based had now been formulated, the papers containing useful data giving guidance on the design of aluminium riveted joints and the types of rivets recommended.

South Africa and the Hague Rules

ONE result of the enactment of legislation based on the Hague Rules has been that, having exercised due diligence to provide a seaworthy and cargo-worthy ship, the carrier, and the ship, are exempted from responsibility for loss or damage arising from the "act, neglect, or default of the master, mariner, pilot or the servants of the carrier in the navigation, or in the management of the ship," together with other detailed immunities as provided in the Hague Rules; and this is also true with regard to certain provisions of the American Act of 1893 known as the Harter Act. A special clause of the Institute of London Underwriters, known as the "Institute Corn Trade Clause (relating to Carriage of Goods by Sea)", was adopted in 1937, holding the assured covered against "loss or damage arising from or resulting from act, neglect, etc.," as detailed above, for which the carrier or ship is relieved of responsibility under the Australian, Canadian and United States Carriage of Goods by Sea Acts and the Harter Act. The special clause further provides that nothing in it shall "limit or affect any rights which underwriters may have by subrogation or otherwise, against the owners of the said vessel," with a further provision that "claims arising under this clause are not subject to the F.P.A. Warranty." The Union of South Africa has now passed the Merchant Shipping Act (No. 37) of 1951, which, among other things, embodies the Hague Rules. Therefore the Institute of London Underwriters has revised its special corn trade clause to make it apply to the new South African Act.

THE BRITISH SHIPBUILDING COMPENDIUM

THE new (1951-52) edition of this volume, which is the only complete buyers' guide to British shipbuilding, shiprepairing, marine engineering and the manufacturers of ship equipment, is now available from THE SHIPPING WORLD, LIMITED, Effingham House, 1 Arundel Street, London, W.C.2., price 20s., post free.

The book provides two-way reference to the whole field. From the 32-page index it is possible to see at a glance the whole range of manufactures of any one company. Alternatively 8,500 companies are grouped under 345 headings to show those which are concerned in the manufacture of each item of equipment.

ON THE "BALTIC"

LOADING CONDITIONS FOR COAL IN DIFFERENT AREAS

By BALTRADER

THERE is still no lack of demand for American coal in the Western European area. The Low Countries, Germany, France and Italy have for long competed with South America, Japan and other countries for the surplus of United States coal. Now at last Great Britain has found herself unable to dispense with similar American assistance, although on a smaller scale. Furthermore, we are told that Poland has fallen out with Denmark over the latter's inability to deliver some of the manufactured articles required by Poland. The supply of Polish coal to Denmark will, therefore, apparently be discontinued; possibly that is the reason why, according to New York agents' advice, Denmark will import 400,000 tons of coal from the United States in the next few months. One cannot but marvel at the capacity of the railways and ports of the Eastern United States to cope with this enormous traffic.

How different is the case of South Africa, which has very fine appliances for shipping coal at Durban and Lourenco Marques; these, however, cannot be kept supplied with coal for export to countries in great need. This is mainly owing to the insufficiency of the South African railway system to deal with its growing internal traffic and its great potential export of coal, manganese ore and other products. Calcutta is another coal exporting centre where the facilities stagger under an exceptional load. There is considerable activity in chartering from Calcutta to Japan, Australia and nearer destinations; but the result is congestion and delay. Even in South Wales, where there is certainly not a very busy export of coal, some detention is often incurred in loading; this is not generally due to lack of port facilities but is caused by the difficulty of releasing coal for export when it is so vital to our own purposes—also to the need for conserving the employment of railway trucks. Wagons cannot be spared to stand at the dockside with a large quantity of coal ready for shipment. The contrast between the ports of the United Kingdom in general and the Eastern U.S. coal ports is that there are so often too many ships for our ports to cope with, whereas the American exporters complain that there are not enough ships to clear their stocks from the loading piers.

Revival in Plate Market

It is still observable that the world freight markets have a power of recovery whenever, as recently, they have faltered here and there. An unexpected instance has been the homeward trade from the River Plate, which until lately has, for a long time, not faltered but fallen down. Not much business has been done compared with a flurry in the heyday of the Plate market, but a number of orders came into the market for cargoes to Western Europe with the conspicuous exception of the United Kingdom. A number of parcels were arrangeable by liners, but the number of tramp ships available was small. Owners were in any case not in the least interested in the rates to which freights from the Argentine had fallen; their ships could do much better by leaving the Plate in ballast and loading elsewhere for the homeward voyage. A few weeks saw a rise from about 65s. to about 95s. per ton for heavy grain to the near Continent, with appropriate rates for Sweden and Denmark. It is not generally expected that the Plate will remain steady for long; the experts continue to point to the small exportable surplus of Argentine grain likely to be available in the coming year.

To come to a more important market, the North Pacific charterers have not found it possible to hold all the ground they have won lately. The Ministry of Food is paying increased rates to draw tonnage in

ballast from Australia to load homewards from British Columbia. It is in Australia, where demand is languid, that much of the tonnage available in the Pacific basin is to be found. There is less shipping than usual becoming ready in Japan or other countries of the Far East. Shortage of tonnage in the East is shown by the steep rise in freights from India, Calcutta coal to Japan paying 122s. 6d., compared with 95s. accepted not long ago. The Eastern North American market shows no sign of winding down in view of the numerous inquiries for vessels to carry coal, grain, sulphur and sugar.

There are indications that Great Britain may find increasing difficulty in maintaining the volume of her exports of motor cars and other manufactured goods. One cannot, however, at present see this tendency reflected in any reduction of inquiry for tramp tonnage for account of the liner companies who continue to operate for trips on time charter, particularly to Australia, at high rates of hire.

The Freight Market

Chartering has been active in the past week and rates are steady. North America continues to provide the backbone of the freight market. The inquiry for American coal comes mainly from Europe, but Japan, South America and Pakistan are also contributing to the demand. In addition to fixtures from Hampton Roads to the Continent at \$10.50, basis Antwerp or Rotterdam, the *Melide*, 8,000 tons, and *Atlantic Ocean* are fixed from Hampton Roads to Karachi at \$21.75, about middle December; and \$24.25 has been paid, Hampton Roads to Karachi and Chittagong for loading in December. The *Leontios*, 9,000 tons, is fixed, Hampton Roads to Japan at \$21, late December. The *Akron* is chartered from Hampton Roads to Buenos Aires at \$18, December/January, and for 2 additional trips at \$17.75, all with option of discharge up river at 50 cents extra. The Ministry of Food has been in the market for North American grain and has chartered *Clintonia* for heavy grain from U.S. Gulf to U.K./Continent at 26s. 3d. per quarter, February 1/29, dates to be narrowed. The Ministry has also taken the *Fernmoor*, 8,400 tons, heavy grain British Columbia to U.K./Continent at 145s., March 24/April 30, dates to be narrowed. The *Meadowbank*, January/February, and *Myrtlebank*, February, will take flour in bags, West Australia, South or Victoria to Ceylon at 80s. per ton. The *Kvernaas*, 8,500 tons, is fixed from full range Australia to the United Kingdom at 120s., basis bulk wheat ex silo, February 1/March 10, dates to be narrowed. Black Sea to U.K., heavy grain, is fractionally down with fixtures at 103s. 9d. for January. Formosa is importing fertilisers from Europe and several fixtures are recorded.

Air Charter Business

Christmas traffic is not prominent in air charter operations this year, owing to restrictions imposed on imports from the Continent to protect our currency. Government employment of charter planes for the time being disposes of much of the heavier types of privately owned British aircraft.

The recent debate in the House of Lords is welcomed as a recognition of the importance of the privately owned aircraft industry. In addition to increased encouragement by our Government, operators of charter planes are hopeful of a change of attitude by other Governments. A relaxation of the rules which prohibit charter operators from booking parcels of freight or individual passengers in their planes is much desired by private operators and should be encouraged when scheduled air services are insufficient.

CANADIAN SHIPPING AND SHIPBUILDING

Mr. Lionel Chevrier's Review

SPEAKING at a dinner in Toronto recently, Mr. Lionel Chevrier, Canada's Minister of Transport, gave a review of the Canadian shipping industry during the past six years. In spite of the impressive maritime position assumed by the country during the last war and the fact that Canada's stature as a trading nation had become increasingly important, the shipping industry found difficulty in adapting itself to a peacetime economy. In large measure, the difficulty reflected severe competition of foreign carriers, better able to adjust operating costs to a lower revenue level. The problem had also been accentuated by the construction in low-cost foreign yards of new commercial units, more modern and more efficient. Mr. Chevrier continued: "In Canada, I believe that the Government has gone a long way towards meeting the needs of a strictly Canadian maritime industry. Let me just mention in passing the establishment of the replacement plan and the transfer plan. The former envisaged the construction of modern ships in Canadian yards and the latter the retention of ownership and of operation by Canadian companies of vessels in competition with low cost operators. I hope that taking advantage of the Government's efforts on their behalf we will soon see further commercial development in the ocean shipping industry."

That did not mean, however, that the production of the shipbuilding industry had been curtailed. At the present time the total programme value of vessels in preparation or under construction is over \$200 million. This represents a huge naval programme of 39 additional units, of which 15 are anti-submarine escort vessels, 14 minesweepers, and the balance various types ranging from an Arctic patrol vessel to a Norton tug. The contracts for the construction of these naval vessels have been awarded for strategic reasons on a geographical basis to the major shipyards on the Pacific and Atlantic coasts and on the St. Lawrence River. The yards on the Great Lakes are fully occupied in the construction of merchant vessels, for the main part bulk freighters and oil tankers. The 21 new vessels under way on the Great Lakes have been ordered by Canadian shipping companies and most of them have received assistance from the escrow fund established by the Government under the replacement plan.

The balance of new construction in Canadian yards is made up of Government vessels such as a new icebreaker for the Department of Transport and an automobile ferry to operate between Port aux Basques, Newfoundland, and Sydney, Nova Scotia. Over and above the new construction which is under way in the major shipyards, there are some 36 bangors and frigates which are being refitted for the Navy in some eleven eastern Canadian yards from Montreal to Charlottetown, Pictou, Halifax and Lunenburg.

New Wages and Conditions for Seafarers

British shipowners and seafarers, through the National Maritime Board, have completed their negotiations for new rates of pay in British merchant ships to start on January 28. For ratings in all departments, the increase in monthly vessels where food is found by the owner is £2 for adults and £1 for boys. Certain ratings in the higher grades receive increases of £2 5s. and £2 10s. The result is that an able seaman's pay will, from the date of the new agreement, be £24 per month, rising in four years to £28. In weekly vessels, where food is not found by the owner, the corresponding weekly increase is 12s. 10d., but the weekly food deduction which may be made by the owner who does provide food has been increased from 17s. 6d. per week to 21s. For navigating and engineer officers, the increase in monthly rates of pay is proportionate, and, therefore, rises to £4 5s. for senior officers in the highest tonnage grades. As regards officers on weekly rates where the food is not found by the owner there is, as in the case of ratings, an additional increase of 3s. 6d. per week, and a corresponding increase in the food deduction made by the owner when he does provide food. The overtime rates, both for ratings and officers, have been increased. The arrival and sailing day section of the Sundays at sea leave agreement has been made more attractive to seafarers. The nights on board agreement affecting officers in foreign-going ships has been modified in favour of officers who, through the exigencies of the trade, are required to remain on board immediately on their return to the United Kingdom after a long voyage abroad. The principle of the eight-hour day in the catering department has been recognised, and special compensation arranged because of the fact that in practice a nine-hour or ten-hour day has regularly to be worked.

Safety of Life at Sea

New International Convention to Come Into Force

THE International Convention for the Safety of Life at Sea, which was drawn up at the International Conference held in London in 1948 under the presidency of Sir John Anderson, will come into operation on November 19, 1952. The Conference was attended by delegates from 30 countries, and the Convention which they prepared provided that it should come into force one year after 15 countries—seven of which had not less than 1,000,000 tons gross of shipping—had deposited their acceptances with the Government of the United Kingdom. The fifteenth acceptance was deposited on November 19 last, and the countries which have accepted the Convention are, in order of date of acceptance: United Kingdom, New Zealand, United States of America, France, Netherlands, Sweden, Norway, South Africa, Iceland, Portugal, Canada, Pakistan, Denmark, Yugoslavia and Italy. The Convention, when it comes into operation, will replace the International Safety Convention which was drawn up in London in 1929.

The 1948 Conference generally confirmed the standards of construction of passenger ships that were laid down in the Convention of 1929, and the new Convention makes no major change as regards the watertight subdivision of ships, but it lays down much more comprehensive requirements with regard to fire protection and firefighting equipment to be carried in passenger ships. It also lays down Rules for fire detection and extinction in cargo ships of over 1,000 tons gross, as well as for passenger ships. It includes requirements to preserve the stability of passenger ships in damaged condition, and requires that cargo ships, as well as passenger ships, shall be inclined in order that masters may be provided with stability information. The Convention includes provisions with regard to the electrical installations in passenger ships, with the object of safeguarding essential services in an emergency and of protecting passengers and crew against electrical hazards.

Life Saving and Radio Appliances

As regards life-saving appliances, the main change made by the new Convention is that the requirements will, in future, apply not only to passenger ships but to all cargo ships of 500 tons gross and upwards, which will be inspected every two years and furnished with a Safety Equipment Certificate covering not only the life-saving appliances but also fire appliances, lights, etc. Ships in special trades that are not provided with lifeboats for all on board will, in future, have to comply with special subdivision requirements. The use of radial davits in new ships, and life-rafts in lieu of lifeboats, is to be discontinued. Every ship will have to carry a lifeboat or lifeboats fitted with radio or provide portable radio for use in the lifeboats. All passenger ships and cargo ships over 1,600 tons gross will, under the Convention, have to carry at least one motor boat or mechanically hand-propelled lifeboat. The new Convention also provides that, in future, a continuous wireless watch on the distress frequency, either by an operator or by auto-alarm, shall be maintained by all ships over 1,600 tons. All cargo ships of between 500 and 1,600 tons will be required to be fitted either with wireless-telegraphy or wireless-telephony. All ships over 1,600 tons will have to carry direction-finding apparatus. The Convention also provides Regulations regarding the carriage of grain, and sets out certain broad principles which will govern the carriage of dangerous goods on board ship.

RECENT SHIP SALES

Motor vessel *Derryphen* (7,952 t.g.), built in 1943 as the Merchant Aircraft Carrier *Empire MacAndrew*, by Wm. Denny & Bros., Ltd., Dumbarton, has been sold by McCowen & Gross to the Cape of Good Hope Motorship Co., Ltd. (Lyle Shipping Co., Ltd.), to be renamed *Cape Grafton*.

One of the oldest British-flag motor vessels in service, the cargo vessel *Loreto* (6,690 t.g.), built in 1919 by Harland & Wolff, Ltd., Glasgow, as the *Glenade* and owned by the Pacific Steam Navigation Co., Liverpool, has been sold to Motor Lines, Ltd., London. She has been renamed *Barbeta* and is understood to have a speed of 10 knots and a capacity of 9,090 tons d.w.

THE LARGEST single shipment of motor cars yet to leave this country has been despatched by the Rootes Group in the *Hoperidge*, 11,000 tons, which has been specially chartered for the purpose.

COAL AND OIL

U.S. SHIPS LOAD COAL FOR U.K.

It is reported from New York that five ships have already been allocated by the U.S. National Shipping Authority to load coal for the United Kingdom. The statement adds that much of the 750,000 tons of coal which, as reported in this column on November 21, is to be sent to the United Kingdom this winter, will be carried in the Authority's ships. This should prevent a repetition of the events of last winter, when iron ore and other cargoes could not be shipped, owing to the lack of shipping space. Since the establishment of the National Shipping Authority in March, sailings by its vessels had reached a total of 679 by November 15. The large majority of these were with coal cargoes, which numbered 475, and accounted for 4,652,567 tons out of the 6,579,203 tons of bulk cargoes lifted. The largest proportion of these coal shipments has gone to France, which by November 15 had received nearly 2,000,000 tons. Shipments to Germany had at this point reached a total of 504,962 tons, of which November shipments accounted for 163,440 tons in 17 cargoes. Other recipients of coal cargoes during the first half of November include Italy, Denmark, Austria, Belgium, Eire and Holland.

Dundee Oil Installation Approved

THE Dundee Harbour Board debate over the leasing of ground to Scottish Oils & Shell Mex. Ltd., for the erection of a terminal at Stannergate, Dundee, on ground owned by the Dundee Harbour Trust, has ended in a reversal of the former decision, and the granting of the approval sought. The oil company indicate that they hope to handle some 60 tankers and an annual throughput of 45,000 tons. The decision to locate the installation in Dundee was part of a general policy aiming at the more economic distribution of their products. Against the lease it was argued that the tanks were too close to the town and to the shipyard (Caledon Shipbuilding & Engineering Co., Ltd.) for comfort, and that the granting of this lease would prevent the future construction in Dundee of the dry dock for which this ground was originally earmarked. Against this latter claim it was contended that there was no guarantee that such a graving dock would ever be built, so that the decision lay between immediate revenue-producing use of the ground, or its retention against a possible but unlikely project in the future.

South African Coal Troubles

IN A memorandum sent to the South African Commission of Inquiry into Coal Shortages, the Cape Town Chamber of Industries has suggested that ships are more dependable than railways in the supply of coal to the Cape Town area. It submits that the establishment of shipping services would "reduce the depen-

dence of communities at the Cape for coal supplies on the obviously hard-pressed and now unreliable railway services." The minimum coal needs for the power stations, locomotives, factories and private consumers of the Western Cape are 1,260,000 tons a year. When a serious coal shortage developed last June, the Chamber first suggested that coal should be carried by sea. The South African Railway Administration, however, refused to make any of its own ships available for this purpose. The Chamber now argues that the Railway Administration has a duty to use all means at its disposal, including ships, to ensure that supplies of coal reach the Cape. It points out that the Administration's steamer *Alce* was lying in the Cape Town docks at the time of last June's coal crisis. Although it was then suggested that the *Alce* should be used to ease the coal shortage, she lay idle at Cape Town for some weeks while the crisis continued, and then sailed for an overseas destination.

Shorter Items

INFORMATION has been received by Cory Bros. & Co., Ltd., from their principals, Vancouver Island Coals, Ltd., that the price of bunker coal at Comox and Nanaimo has been increased. The new price at Comox is 11.25 Canadian dollars per ton for Comox bunker steam coal, and the same price now holds at Nanaimo for Nanaimo Wellington. Both prices are f.o.b. ex tips, plus trimming at a price not exceeding 25 cents per ton.

COAL and coke shipments from the Wear in October amounted to 268,971 tons, making a total of 2,530,104 tons for the first ten months of the year. The figure for the corresponding period of last year was 2,508,436 tons and for 1938, 3,624,643 tons. This year's shipments included 427,680 tons sent to foreign ports. This was only about one-quarter of the foreign exports in 1938. The biggest item of imports was 142,050 tons of iron ore and the second largest import 126,703 tons of petroleum.

OFFICIAL NOTICES

New Companies

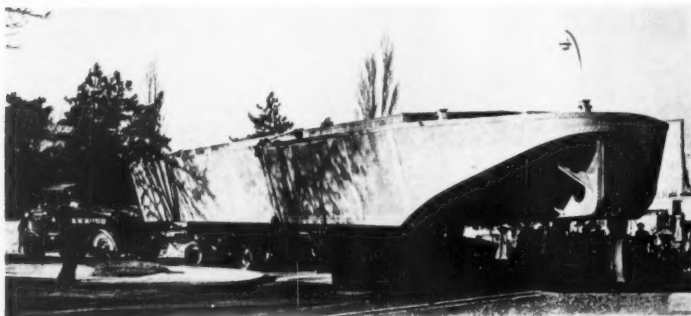
ST. DAVIDS STEAMSHIP CO. (U.K.), LTD. Registered November 22. Nominal capital: £5,000 in £1 shares. Directors: Not named. Subscribers: L. W. Williams, 80 Bedford Road, London, N.2 (clerk); J. R. Samuel, 24a Dalehurst Gardens, London, N.W.3 (secretary).

AMSTERDAM DRY DOCK CO. (LONDON), LTD., 22 Basinghall Street, London, E.C.2. Registered November 16. To act as representatives, selling and buying agents of Amsterdamsche Droogdok Maatschappij N.V. of Amsterdam, previously carried on by Gerard F. Walker. Nominal capital: £100 in £1 shares. Directors: G. F. Walker, 3 Shaldon Way, Walton-on-Thames; A. M. Versluys, Amsterdam; J. W. R. Thomson; and A. J. Van Deijne.

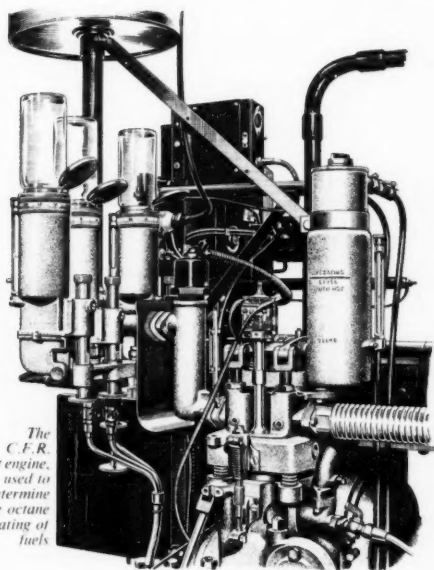
[Information from *Jordan's Daily Register of New Companies*]

150-Ton Light Alloy Barge

This light alloy barge was built on the Thames, transported by land and sea to Cardiff, and there shipped to Rio de Janeiro for use by Cory Bros. & Co., Ltd. The barge, which was built by the Fairmile Construction Co., Ltd., weighs only 10 tons, and will carry 150 tons of cargo. It measures 80 ft. by 20 ft. by 5 ft. 9 in. The barge was lifted from the Thames at Dagenham and transported by road to Avonmouth, where it was again launched, towed across the Bristol Channel to Cardiff, and loaded on the steamship *Sneaton*. The transportation problems were handled by the shipping and forwarding department of Cory Bros. & Co., Ltd., who will use it at their Rio bunkering and stevedoring depot.



INTERESTING FACTS ABOUT OIL

No. 11. *What does "Octane Rating" mean?*

The
C.F.R.
test engine,
used to
determine
the octane
rating of
fuels

The octane rating of a gasoline is the measure of its anti-knock value. The higher the octane number, the higher the anti-knock quality.

The term "octane rating" derives from the hydrocarbon iso-octane, which, because of its high anti-knock quality, has been adopted as one of the two standard "reference fuels" used in laboratory tests. The other reference fuel is normal heptane, a hydrocarbon of low anti-knock quality. By blending these two fuels, mixtures are obtained of any anti-knock value required, and the percentage by volume of iso-octane in any mixture represents the octane number of that mixture. The anti-knock value of a motor spirit is signified, after laboratory test, by the octane number of that blend of the reference

fuels, which matches the motor spirit in anti-knock quality.

To determine the anti-knock values of fuels a stationary test engine is used, known as the A.S.T.M.—C.F.R. engine (American Society for Testing Materials—Co-operative Fuel Research). This engine has a single cylinder, adjustable in compression ratio while the engine is running. The carburettor is so made that it is possible to change over quickly from one fuel to another by turning a control valve.

When a motor spirit is tested for anti-knock value, the engine is run on a sample of the spirit and compression is adjusted until a definite standard of knock intensity is reached. The engine is then run, at the same compression ratio, on a blend of the two reference fuels and the two performances are compared. A second blend is then made slightly better or poorer than the first, and comparison is made between the sample of unknown rating and the two blends each of known rating. From this comparison the knock rating of the sample is determined.

Fuels of sufficiently high octane number will not knock under any practical conditions of use. No advantage is gained by increasing the octane number of a fuel beyond the necessary level for knock-free operation in the type of engine for which the fuel is intended. To use a high octane aviation fuel in an ordinary private car would not improve the car's performance—the fuel would probably be less suitable than ordinary petrol.

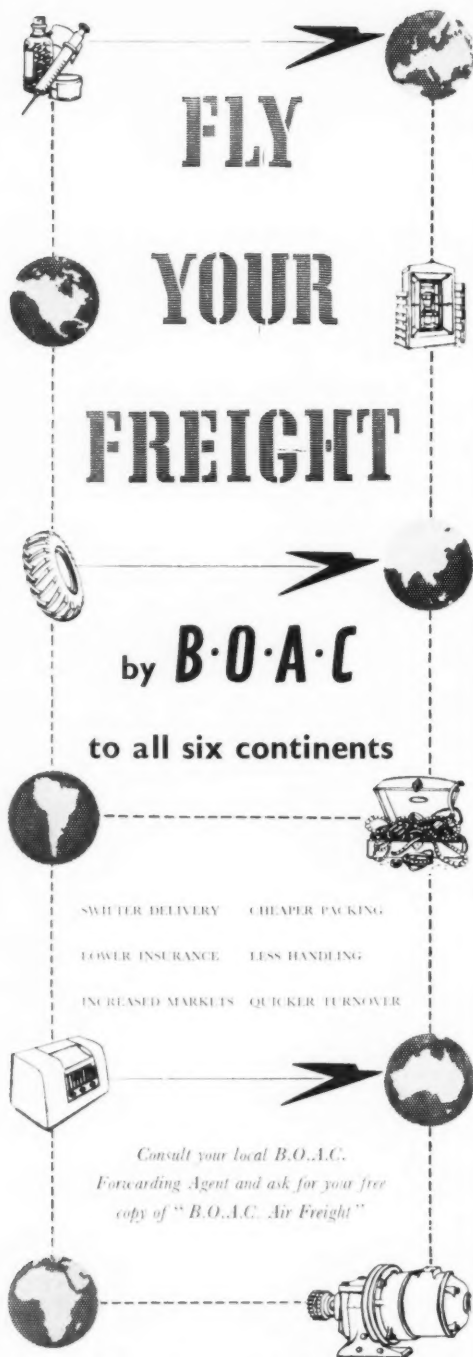


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INTERNATIONAL OIL BUNKERING



ANGLO-IRANIAN OIL COMPANY LIMITED



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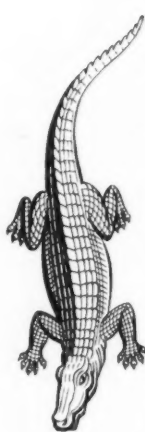
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BRITISH EUROPEAN AIRWAYS

THE AIRSPEED "AMBASSADOR"

THE LARGEST BRITISH TWIN-ENGINED TRANSPORT

By E. N. B. BENTLEY

WHEN the Ambassador made its first flight in the summer of 1947, its modern conception and excellent finish gave promise of a very fine aeroplane. In the course of $4\frac{1}{2}$ years a great deal of development has taken place and the Ambassador was granted a normal category Certificate of Airworthiness for carrying passengers, in July of this year. Since then, Airspeed, Ltd., of Christchurch, Hants, has become the Airspeed Division of the de Havilland Aircraft Co., Ltd. A long development period tends to produce a vicious circle, in that new airworthiness requirements are issued in the meantime, and in modifying the aeroplane to meet them still further delays are incurred. Fairly considerable changes were made in the British Civil Airworthiness Requirements in June 1948 and in January 1951, and it seems likely that the incorporation of design modifications to meet these requirements has had something to do with the protracted time of development.

The basic conception of the design of the Ambassador was high aerodynamic efficiency and ease of maintenance—two extremely conflicting ideals to aim at. The twin-engine arrangement makes for simpler design and servicing and the high aspect ratio wing mounted on top of the fuselage is very efficient aerodynamically. The high power of the engines, necessary to maintain height at full load with one engine stopped, naturally provides a wide range of cruising speeds varying between 210 and 270 knots. The maximum permissible all-up weight of the Ambassador is 52,500 lb., the wing area is 1,200 sq. ft. and total take-off power is 5,250 h.p., giving a wing loading of 43.6 lb. per sq. ft. and a power loading of 10 lb. per h.p. The construction of the aeroplane is, of course, all metal and the retracting undercarriage has twin wheels on both nose and main legs.

High Aerodynamic Efficiency

A distinguishing feature of this aeroplane is the big span wing, measuring 115 ft. from tip to tip, and the triple fins on the tail unit. Contributing to the high aerodynamic efficiency of the Ambassador is the laminar-flow wing profile, the forward part of which is accurately contoured and smoothly finished. The engine cooling and cowling is based on much wind tunnel and full scale research, to give the lowest possible cooling drag. Fuel is carried in the root end of each outer wing, just outboard of the engines, in integral tanks of 500 gallons capacity each. No separate tank, either metal or fabric, is used, the wing structure between front and rear spars forming a petrol-tight container. A special plastic skin is sprayed on internally for additional safety, and these tanks have been thoroughly tested and tried out in service. This arrangement of fuel storage not only saves considerable weight but enables a good deal more fuel to be carried inside a given wing shape. For special long-range work, with reduced payload, additional petrol can be carried in the wing between the engines and the fuselage, thus increasing the fuel capacity from 1,000 to 1,600 gallons. De-icing for the leading edges of the main planes, tail planes and fins is provided by petrol-burning combustion heaters. An unusual refinement is a lamp inset in the nose of the fuselage, on each side, which can be switched on at night to examine the wing leading edges for signs of ice accumulation.

The power plant consists of two Bristol Centaurus air-cooled twin-row, 18-cylinder radial engines, developing 2,625 h.p. each for take-off. The two-stage superchargers enable the take-off power to be maintained up to an altitude of 9,500 ft. and give optimum cruising performance at 20,000 ft. The all-metal propellers are of the de Havilland four-bladed type and the blades can be moved into negative pitch when required for

additional braking power. The blades are de-iced by electrically heated elements. The introduction of pressurising demands not only the compressors, filters, ducts and controls, but also a fuselage structure, doors, windows and control fairleads, which are airtight in all conditions of stress and temperature. A compressor is driven by each engine and the heat generated during compression is such that no additional heating of the air is required. In fact provision is made for a cooler in the circuit, so that the temperature of the air passing into the cabin is thus adjustable over the full range required for operations. The pressurising is such that ground level pressure can be maintained up to a height of 9,000 ft. and even when flying at 20,000 ft. the cabin pressure is equivalent to that at only 8,000 ft.

The Control Cabin

The control cabin is well planned, with a full set of blind flying instruments for captain and second pilot and a central pedestal, accessible to both, for throttle, propeller, undercarriage, flap and trim controls. The second pilot's seat can be moved back, well away from the instrument panel, to allow him to use a chart board. Brakes are operated by toe pedals, mounted on the rudder pedals, and either pilot can manipulate the nosewheel steering for accurate taxiing when manoeuvring among other aircraft or near buildings. In addition to the electrically heated windscreens in front of each pilot is an easily opened clear vision window at each side of the cabin. An example of the forethought of the designer is the provision of differentially operating thigh supports for the pilots, which swing up or down as the legs are moved to push the rudder pedals. A Smiths S.E.P.1. automatic pilot is fitted as standard; this is an electronic device, with powerful electric motors, which can fly an aeroplane far more accurately than any human pilot. A wireless operator forms the third member of the flight crew, and he is seated on the port side, aft of the captain, with all the numerous V.H.F., M.F., direction finding, beam approach and other aids which are essential for all-weather flying. In addition to the flight crew, a steward and stewardess are also carried.

Passenger Accommodation

Passengers enter by the usual rear door on the starboard side, which in this case opens upwards and locks in that position. The Ambassador carries its own passenger steps, in a compartment under the floor, and is thus independent of the usual mobile steps which have to be wheeled in position by the airport staff. Opposite the entrance is a curtained recess for hanging coats and aft of the entrance are two lavatories furnished with mirror and washing facilities. Further aft is a freight compartment, with an outside loading door on the starboard side. The seating capacity of the passenger cabin is for 47 passengers and over most of the length the seats are arranged three on one side of the gangway and two on the other. The eighteen seats in the four front rows are backward facing and the remaining 29 are forward facing. Between the fourth and fifth rows, which face each other, are folding tables. Every seat is individually adjustable and is provided with a folding table. The large windows, consisting of double plastic panes with dry air sandwiched between them, give a good view from all seats, there being no wing to obstruct the passing scene. This and the spacious, well lighted and air conditioned cabin all contribute to the wellbeing of the air traveller. At the forward end of the passenger cabin is a bulkhead with a central door, beyond which, on the port side, is a luggage compartment. This, together with

Monthly Air Transport Section

the rear compartment and one in the extreme nose, gives a total capacity of 350 cu. ft. On the starboard side is the crew's entrance door and steward's galley. This is an excellent example of maximum usefulness combined with the minimum of space and weight. The efficiency of the galley, and of the stewards, needs to be of a high order if they are to serve and clear away 47 lunches or dinners in the 75 minutes flying time between London and Paris.

In a civil transport the word performance means more than just speed and rate of climb; it includes both safety and economy. One of the most important safety factors is the ability to keep on going after one engine stops, and this implies not only adequate power but adequate controllability. Since the Ambassador has a normal certificate of airworthiness in the international transport category, the single-engine performance can be taken for granted, both in quantity and quality. Under present-day British and international (I.C.A.O.) requirements a C. of A. is not granted until the aeroplane has demonstrated its ability to maintain height, at the maximum permissible all-up weight, with one engine stopped. The gentle stalling characteristic of the wing is another potent factor in achieving safe operation, especially in bad weather flying. The runway length required, to meet I.C.A.O. conditions of climbing away from take-off when one engine stops at the most critical point, is 1,530 yards. The best cruising performance is at about 20,000 ft. altitude where, cruising at a true speed of 236 knots (272 m.p.h.), the fuel consumption is at a rate of 1.20 nautical (1.38 statute) miles per gallon. If the speed is reduced to 200 knots (232 m.p.h.) then 1.37 nautical (1.58 statute) miles per gallon is achieved. It pays to cruise at high altitude unless the journey is a short one which does not justify climbing to that height and coming down again. At 10,000 ft. the air miles per gallon are practically the same for a given power, but the cruising speeds are 15 to 20 knots slower.

Details of Payload

One of the most important details of performance, from the operator's point of view, is the payload for a given range. The ranges quoted are those in still air (no headwind) after allowing for diversion from the aerodrome of destination to one 200 nautical (232 statute) miles away, plus 45 minutes holding before landing, plus 5 per cent. On this basis the payload which can be carried for a 400-miles journey is 11,500 lb. and for 800 miles it is 8,500 lb. This business of fuel reserves is an outstanding example of the price to be paid for an increase in safety. On a 500-miles journey the total fuel carried, to give the reserves quoted above, is sufficient for 880 miles. So that, if no reserves of fuel were carried, the payload could be increased by 1,700 lb., the equivalent of eight passengers and their luggage. In assessing the commercial efficiency of the Ambassador, an obvious means of measuring the progress achieved is to compare it with the Vickers Viking which it will replace.

Operating Economies

The lecture given early this year, before the Institute of Transport, by Mr. Peter Mascfield, chief executive of B.E.A.C., on air transport economics, showed some interesting comparisons. The Viking, introduced on the airlines in 1946, carried 24 passengers (it now carries 27) at a normal cruising speed of 170 knots and the direct operating costs per capacity ton-mile are 28.9d. The Ambassador carries 47 passengers at a normal cruising speed of 230 knots and the direct operating costs per capacity ton-mile amount to 22.5d. Graphs shown in Mascfield's lecture indicate that the total operating cost per capacity ton-mile, on a 200-miles route, is 46d. for the Viking and 36d. for the Ambassador. On longer stage routes, up to 600 or 700 miles, the costs are somewhat lower, but the difference between the two aircraft is about the same. On a short stage route, such as London-Paris, the landing fees form an unduly large proportion of the

operating costs and one advantage of the Ambassador is that it carries more passengers in proportion to its landing fee. Any significant improvement in cost per ton-mile means much to an airline. This is clearly shown by Mascfield's statement that the Viking achieved an annual profit of £8,000 on the London-Paris service, whereas the Ambassador is expected to yield £265,500 a year when operating under the same conditions.

At the inception of the design Mr. A. E. Hagg, F.R.Ae.S., chief designer of Airspeed, Ltd., insisted on high aerodynamic efficiency, and this was demanded not only in the design but also in the quality of construction, where it can have a considerable effect. The cost of the Ambassador, at current rates for civil transports, may well be over £150,000. But an airline which makes intensive use of its aircraft will always consider it worth while to pay highly for high commercial efficiency. An improvement of 20 per cent in cost per ton-mile, in five years, is a tribute to the progressiveness of the aircraft industry and a good omen for the future of British air transport. The Ambassador now about to go into regular service with British European Airways Corporation is the largest, most powerful and most up-to-date twin-engined transport in civil operations. The 20 of the *Elizabethan* class airliners being delivered to B.E.A.C. should put the Corporation well in front of its competitors, both in prestige and in commercial efficiency.

BELGIAN HELICOPTER MAIL SERVICE

Results of First Year

The first helicopter mail service to be operated on the European continent has completed its first year of activity. The results are highly encouraging, and Sabena Belgian Airlines, the carriers, have drawn the following observations from their experience.

The helicopter mail service is flown daily along an itinerary which goes from Brussels to Libramont, Liège, Tongres, Hasselt, Beringen, Turnhout, Herentals, Antwerp and Brussels. The length is 268 miles. The helicopter lands at each stop to unload mail bags and load new ones; at Libramont and Beringen, refuelling operations take place. During the first year of activity, more than 50 tons of mail have been carried, which represent some 4,630,000 letters and average 400 lb. per operation day. Sabena assigned two Bell 47D1 helicopters to this service. These machines flew with an average regularity of 91.2 per cent on the whole circuit, while the regularity at stops reached only 86 per cent. In a helicopter mail service, a technical delay of more than half an hour at the start or en route compels the carrier to interrupt the service, a highly unfavourable factor from the statistical point of view. One of the helicopters is already equipped for instrument flying, and it is hoped that in the near future cancellations or interruptions of services because of bad weather conditions will be reduced.

Punctuality

The percentage of arrivals on time or with a few minutes advance or delay is also a determining factor of a helicopter mail service operation. The Sabena's helicopters' punctuality has been of 89 per cent on the entire lap during this first year of activity, and of 90.6 per cent at the arrival point. Practically, since March last, punctuality at the arrival port has always been 100 per cent. The 268 miles circuit includes 12 stops (two for refuelling operations) and has to be completed in 4 hours 42 minutes at the block to block speed of 63 miles per hour, or commercial speed of 54 miles per hour. During the first year, the average time spent at the different stops has been 35 minutes 30 seconds, i.e., 3 minutes per stop (including refuelling).

Sabena, the Belgian national airline, showed an operating loss of some £84,000 during 1950. The airline's revenues totalled £6,608,000 and expenditure was £6,692,000.

The Norwegian whaling company Melsom & Melsom, of Larvik, has ordered a helicopter for use during the 1952-53 whaling season in the Antarctic. The helicopter is a Westland Sikorsky S-51 to be built in Britain for delivery next summer. The helicopter will be installed in the factory ship *Norhval*.

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**THE BRISTOL SYCAMORE MARK 10**

Ambulance Version of the Type 171 Helicopter

Preliminary details have been released by the Bristol Aeroplane Co., Ltd., of the Sycamore 10, ambulance version of the Bristol Type 171 single-rotor helicopter. Specially designed for air ambulance work and general communications operations, this version is now undergoing an intensive Ministry of Supply test schedule at Boscombe Down. Extensive modifications have been carried out to enable the aircraft to accommodate two G.S. stretchers, which are carried one above the other athwart the machine. To house the stretchers, two large "Perspex" blisters have been incorporated, one on each side of the fuselage. They are detachable and can be replaced by ordinary faired units when the aircraft flies in a normal communications role.

The Type 171's normal sliding doors, which would be rendered inoperative by blisters, are replaced by hinged doors which may be jettisoned if necessary. The lower stretcher is supported by a metal structure which can be

**Arrangement of Bristol Freighter for Supply Dropping**

A number of Bristol Freighters have been delivered to the Royal New Zealand Air Force, for which they will perform many roles, including casualty evacuation, supply dropping, cargo and troop carrying, and aerial top dressing. This photograph shows one of the Freighters arranged for supply dropping, with a roller installation along which containers are conveyed to the rear of the machine for dispatch through the port rear door.

folded back as necessary to provide three normal passenger seats. The upper stretcher is supported by bars normally housed in a vertical position alongside the engine bulkhead; when needed they can be swiftly swung into position and made firm with a quick-release pin. Both stretchers are secured by clamp mechanisms. The engine bulkhead also carries a housing for bottles of plasma and a plug socket for electrically heated blankets for use in cases of exposure or shock. In the air ambulance role the aircraft carries a medical attendant who sits beside the pilot. His chair is of the swivel type to enable him to attend casualties during flight. To give him complete freedom of movement the back of the pilot's seat has been reduced in height. In the normal communications role, the attendant's chair and the rear accommodation provide seats for four passengers.

International Aircraft Brokers' Association

Three Grades of Membership

At a conference in Paris last month the International Aircraft Brokers' Association (IABA) was definitely formed. The Association has as its objects the closer cooperation of airbrokers working internationally, and maintenance of a high standard of ethics in the profession; the general expansion of air charter business; liaison with public bodies, governments and associations for the development of that object; the study of documents of carriage and other documents, with the right to produce new ones or improve on existing ones when necessary; the cooperation between the air freight markets already in existence, and generally to help brokers working internationally to transact their business and to exchange information.

Membership will be divided into three categories: (1) *Honorary Membership*—those associations, official bodies or individuals which the Council of IABA will consider fit, in its interests, to approach and request to accept honorary membership; (2) *Associate Membership*—to consist of national associations of aircraft brokers in those countries where such associations exist. These members will have the right to attend all meetings of IABA, and will have the right to one seat on the Council in an advisory capacity, but without voting power. Invitations to the national associations already in existence, to become associate members, will shortly be sent out; and (3) *Active Membership*—will be limited to brokers actively engaged in the chartering of aircraft; the promotion of air charter business generally and the sale and purchase of aircraft. These members will have full voting powers, and will be eligible for election to the Council. The permanent headquarters of the Association will be established in Paris, but until accommodation is available, the administrative headquarters will continue to be c/o E. A. Gibson & Co., Ltd., Cunard House, Leadenhall Street, London, E.C.3.

At the conference, 30 firms of brokers gave an undertaking to join IABA, and 25 undertakings to join were received by proxy. The Council will consist of one active member from each country represented in the Association, and will appoint its own chairman. Each applicant for membership is to be investigated closely as to nature of business, financial standing and general reputation. In the active members' section, no broker will be allowed to join unless he is actively engaged in the charter business. Forwarding agents, travel agents and members of any associations will not be excluded from joining because they act in other capacities as well, but any aviation activity other than chartering or sale and purchase will not necessarily give them the proper qualifications to become members of the Association.

In May 1951 the de Havilland Aircraft Company announced that the French shipping concern Chargeurs Réunis had signed a purchase contract for two Comet Series I aircraft (de Havilland Ghost turbines) for the replacement of piston-engined airliners on the routes of its associate company, the Union Aero-Maritime de Transport, which connect Paris with French Equatorial Africa and Indo-China. On October 30, a further contract was signed increasing the number to three Series I Comets. Chargeurs Réunis also holds an option for Series II Comets, with Rolls-Royce Avon axial engines. Union Aero-Maritime de Transport has developed an efficient operating and maintenance organisation, and it benefits from the long experience and worldwide traffic handling system of the Chargeurs Réunis, for both passengers and freight.

CHANGING CONDITIONS IN AIR CHARTERING

ANNUAL REPORT OF THE BRITISH INDEPENDENT AIR TRANSPORT ASSOCIATION

THE first annual report of the British Independent Air Transport Association for 1950-51 opens with an elucidation of the manner in which conditions in the industry have entirely changed in comparison with preceding years. The previous four years were extremely difficult ones, resulting in the discouragement of the operators and the consequent closing down of a considerable number of air transport organisations. Several of the unfortunate companies which had suffered reverses, and had found the restrictions too crippling, were glad to sell their aircraft to recoup losses. Most of the Dakota aircraft formerly operating in the country were sold to overseas buyers and in many cases the sellers closed down and their assets were acquired by more optimistic concerns. The only comparable development on the reverse side was the purchase in 1951 of a large number of B.O.A.C. York aircraft by one of the leading air transport operators.

This has meant that there has been for much of the time lack of opportunity for aircrews and other staff; skilled personnel have been forced to seek employment in other fields and their experience has been wasted or completely lost. The main causes of these difficulties have been the restrictive conditions under which the companies have operated and the inheritance of postwar unsettlement. The inevitably increasing demand for air transport has been slow in making itself felt, but with the gradual realisation of the value of speed and the economy effected in other directions by the use of air transport, together with the Government demand for aircraft arising from political events, the failure to find sufficient work to satisfy the needs of the operators has given way instead to a shortage of air transport facilities. Consequently, there has been in general satisfactory employment of the independent companies' aircraft. Summing up, the outcome of the year's operations has been the elimination of a heavy percentage of the operators and the consolidation of the remaining companies.

Main Objects of Policy

This change in the nature of the air transport industry and also the fact that the operators are not now engaged solely in charter work, that is, many of them are running scheduled services and are important Government contractors, has necessitated a change also in the style and structure of the Association. A further change which will affect the Association even more than the alteration in its style and structure is the election of a new Government. This has led the Association to formulate its intentions with regard to the immediate future and B.I.A.T.A. policy is set out as under:—

Restoration of a wide measure of freedom for private enterprise by revision of the Civil Aviation and Corporations Acts of 1949, which policy should be reflected in directives to Colonial Governments.

Pending the necessary legislation, the existing Acts to be interpreted more liberally towards private enterprise and the field of charter work to be primarily reserved for the independent operators.

The setting up of a statutory licensing authority for the approval of air transport organisations and their operations.

A return to the principle of airport management by municipal and private enterprise.

Free Enterprise in Civil Aviation

The Association has long urged drastic economies in the administration of civil aviation and has always contended that the present system of nationalised airways and a large Government department, being occupied to a great extent in upholding restrictions to sustain controls, is an expensive method of directing the industry. It is hoped that the Government will effect the reforms called for and the considerable saving of public money which would ensue. It should be possible in the near future to estimate the measure of flexibility that will be introduced in the air transport industry and the fuller share of economic activity for free enterprise that operating companies may enjoy in consequence.

Many of the problems with which the operators have to contend arise directly or indirectly from international requirements. The Association has therefore consistently engaged in correspondence with the International Civil Aviation Organisation and the Ministry of Civil Aviation and has attended many meetings with a view to obtaining

relief of onerous requirements. B.I.A.T.A. has given special consideration to the following matters in this connection:—

The definition of a scheduled international air service and the interpretation of Article 5 of the Chicago Convention.

The removal of the requirements for independent operators' aircrews to have visas and passports.

Flights abroad: The curtailing of prior notice requirements to not more than 24 hours in advance of the time of landing in the country concerned and automatic approval for specified types of operation.

The limits of insurance and conditions applicable under the Warsaw Convention, and the Draft Convention for the unification of rules relating to the liability of the carrier.

The limits of liability and the system of jurisdiction governed by the Draft Convention on damage caused by foreign aircraft to third parties on the surface.

Associate Agreements

Following on a meeting with the Minister of Civil Aviation, and a proposal that there should be meetings between the Corporation and the independent operators, a series of meetings was convened. The Association thought that the Corporation should disclose its plan of operation for the next five years so that operators' fears that the more lucrative routes would be taken away from them might be settled. The independent operators also outlined their plans and the outcome of the meetings was in general a wider understanding of the position, although it was apparent that operators would lose some routes. The Corporation confirmed that they were not interested in charter work as such, that they were leaving the charter market and would undertake only the odd charter and then only on their own routes. One result of the Association's efforts in connection with associate agreements has been the extension of the duration of agreements from two to five years. Since that time it has been made clear to the Minister by the Association that a lack of enthusiasm in undertaking associate routes was caused by the fact that financial support was not always available for a short-term programme and the purchase of aircraft could not be justified unless agreements were extended to ten years. There has been considerable sympathy for this point of view, and a ten-year agreement was granted to one operator. Since the change of Government, however, the issue of long-term agreements has been postponed as an interim measure in order that the present Minister, Mr. J. S. Maclay, may review the general policy with a view to extending opportunities for private companies.

Combined Air-Sea Travel Agreements

Negotiations are taking place between the British Overseas Airways Corporation and certain Mediterranean shipping companies to make available in the Mediterranean and Middle East area booking and fare facilities similar to those now existing in the western hemisphere. The advantages of an air journey in one direction and a sea voyage on the return, or vice versa, both of them at half of the respective return fare, are already available to passengers on certain B.O.A.C. routes. The complete return ticket, covering both the sea and air journey, can be booked with either the Corporation or the shipping line concerned. B.O.A.C. has agreements with three shipping lines to enable passengers to take advantage of these arrangements. One of these is with the Farrell Lines between the United States and South or East Africa. Similar arrangements operate with the Furness Bermuda Line for journeys between the U.S.A. and Bermuda. The agreement with Moore-McCormack Lines applies to passengers on round trips either within the western hemisphere or between points in the western hemisphere and Europe. Thus, for example, a passenger may sail from New York to Buenos Aires and then fly back to New York by B.O.A.C. via Europe on one ticket.

The Union of South Africa Government has agreed that the Australian Government should institute a bi-weekly air service to South Africa, to start on July 1, 1952.

Silver City Airways, whose Lympne-Le Touquet air ferry service carried 13,000 cars over the Channel during the season recently ended, are to begin a similar additional service between Eastleigh, Southampton, and Maupertus, Cherbourg. At first, two Bristol Freighters will be used, operating an hourly service.

IF ROPE COULD TALK . . .

"Stop pinching me, you pulley!"

**WRONG**

Pulley groove too narrow

**WRONG**

Pulley groove too wide

**RIGHT**

Pulley groove correct—supporting the rope for 1/3rd. of its circumference

You can't punish ropes **and** expect to get the best out of them. So watch your **PULLEYS** and **SHEAVES**.

The radius of the groove of a pulley should always be slightly larger than that of the rope passing over it. If the groove is too narrow, it will crush the rope and soon damage the wires. If too wide, the rope not only wears more quickly at the point of contact but also cuts a false groove in the pulley.

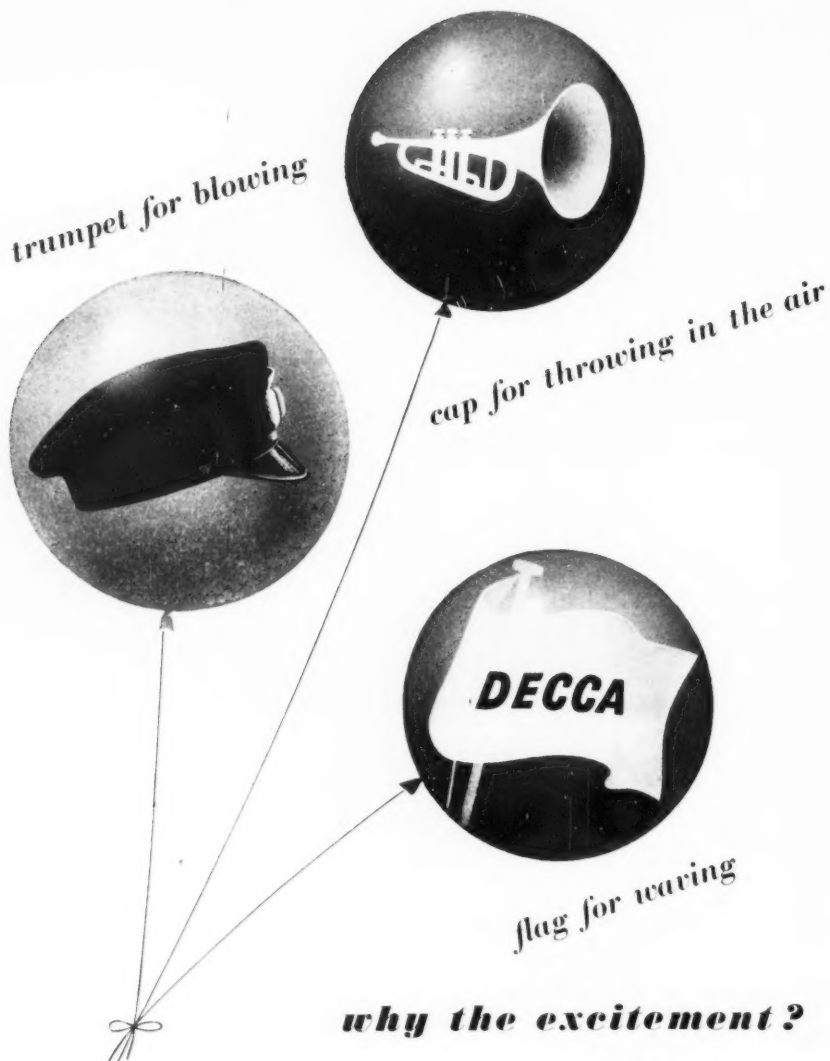
With sheaves, oil the bearings at frequent intervals and check that they rotate freely. A seized up sheave can ruin a rope very quickly. Watch alignment too; see that sheaves, drums and pulleys are set exactly in line with the rope that is working over them.

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GERMAN SHIPPING AND SHIPBUILDING

BUILDING UP THE WEST GERMAN FLEET : BUSY SHIPYARDS

By a Special Correspondent

ACCORDING to Lloyd's Register of Shipping in October there were 139 ships with a total gross tonnage of 130,927 tons under construction in Western Germany. After Great Britain, France and Japan, the German shipyards now occupy the fourth place in world shipbuilding. The German shipowners, however, are not quite satisfied with the developments in the yards, since a great part of the tonnage to be built is ordered from abroad while German owners, owing to their lack of capital and the shortage of public money, have to restrict their plans. Nevertheless the reconstruction of the German merchant fleet is proceeding and today nearly all prewar shipowners again are active; but there is a great difference between rebuilding in the liner companies and in the tramp fleets.

The tramp owners have in part replaced their prewar tonnage. Those shipowners especially whose ships ply in Continental trade have reached about 50 per cent of their prewar tonnage. Tramp ships of the Liberty size, i.e., of about 10,000 tons d.w., are needed for carrying grain, ore and coal in bulk in the ocean trades. A certain number of ships for this purpose are under construction or on order, but the shortage of German tonnage of this size will continue. The new German tramp fleets, moreover, suffer a further disadvantage.

As the yards, after the removal of the shipping and shipbuilding restrictions, could not build quickly enough to cover the requirements of the shipowners, most of these bought secondhand ships from abroad to replace their war and postwar losses as far and as quickly as possible. But these ships are of a great age and low speed and, though these facts are not at the moment very important, they will be a handicap to the industry if the shortage of tonnage in the world diminishes and only modern and fast ships can bring profit to their owners. It seems that the first stage of development in rebuilding the German tramp fleets is closed, for the shipowners today are not trying to enlarge their fleets at any cost. Indeed, they buy only high powered and modern ships, and in many cases prefer to give an order to a shipyard, although the term of delivery often exceeds two years or more.

The Liner Fleets

The German liner companies had to suffer even greater disadvantages, and the rebuilding of the fleets of those companies, which owned most of the German seagoing tonnage before the war, proceeds only slowly. Though some regular services are in operation the number of owned ships is small, and for most of the regular sailings ships are chartered. To give an example, the Hamburg-Amerika Line now has in service 7 liners of 2,700 or 5,000 tons gross each compared with 109 ships of all sizes in 1939; and the Hamburg-Süd-Amerika Line now has three ships of 7,000 tons gross each running under its flag, against 52 of 3,000 to 27,000 tons gross in 1939. An increase of German liner tonnage can be expected at the end of next year, when the first fast cargo ships, ordered in April 1951, after the restrictions against shipbuilding in Germany were lifted, come into service. It seems remarkable that all ships ordered up to date are cargo liners and fitted chiefly for the quick loading and discharge of cargo. There is, however, cabin accommodation for anything up to 12 passengers, and this accommodation is comfortable and spacious. The only exception is a train and car ferry of about 1,000 tons gross, which was ordered by the German Railways for the new Grossenbrode-Djedser service.

German tanker owners have rebuilt their fleets in part. A number of coastal and medium-sized tankers are now flying the German flag. Most of them were

purchased from abroad and only a few of 1,750 to 2,750 tons d.w. are new ships. The largest tanker is the *Roland*, which has entered service recently. This ship was built in 1936 by the Deutsche Werft, Hamburg-Finkenwärder, and was damaged during the war. In 1950 the ship was purchased as a wreck by a German company and towed from the Piraeus to Bremen, where the A.G. Weser rebuilt and lengthened her. With a deadweight capacity of 17,750 tons, this tanker today is the largest German merchant ship and the most modern unit among Germany's ocean-going tankers. Among the many new contracts for tankers signed with German yards there are two contracts from German shipowners. A motor tanker of 16,500 tons d.w. and about 11,600 tons gross was ordered by John T. Essberger; and Ernst Russ, new to tank shipping, also ordered a motor tanker of 18,000 tons d.w. and about 12,000 tons gross. Both ships are to be built by the Deutsche Werft, Hamburg-Finkenwärder.

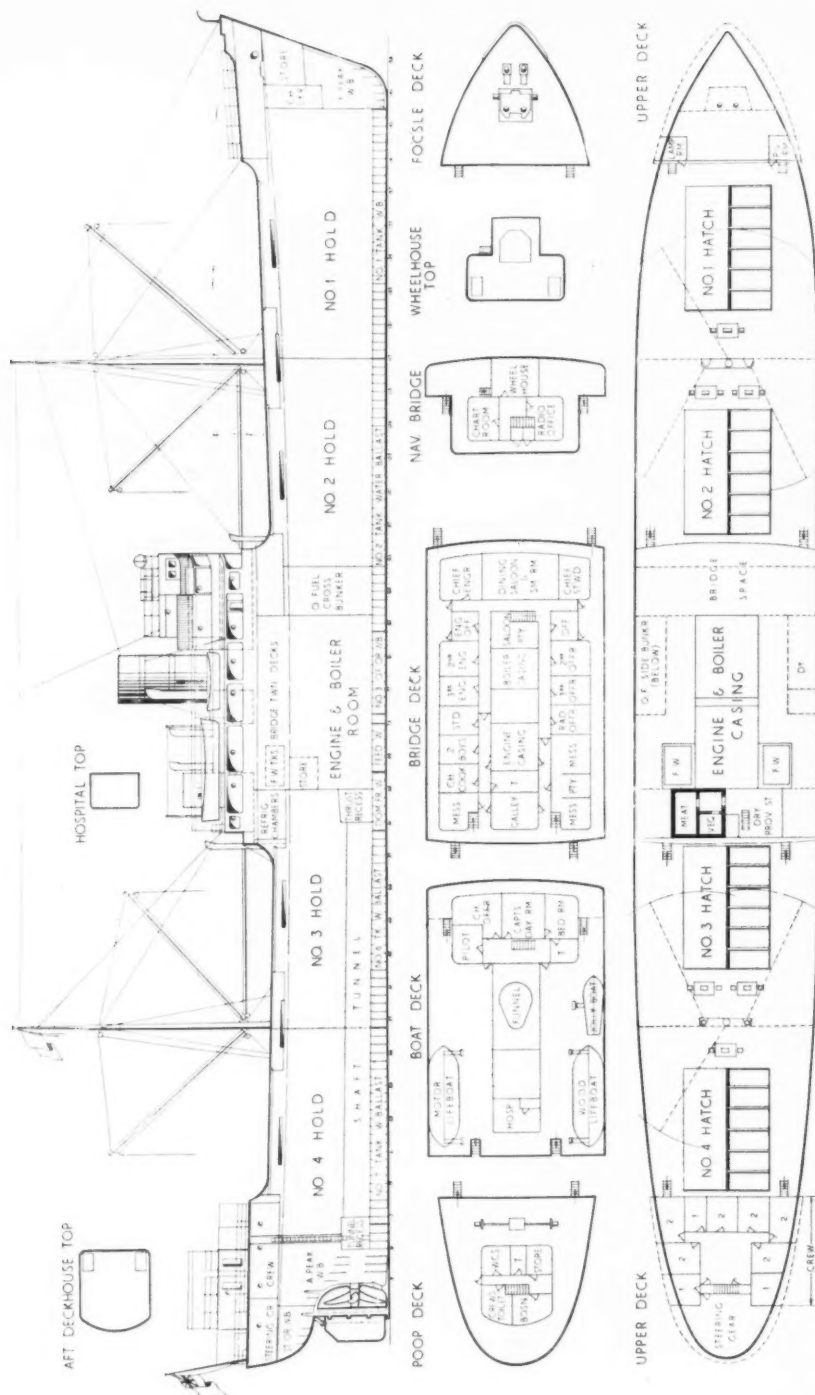
Supply Difficulties

The German shipyards are fully engaged up to the end of 1953. As mentioned above, a large proportion comes from abroad, most of them from Panamanian owners, with others from Britain, Sweden, Norway, Netherlands, Denmark and Honduras. Even Switzerland is to be found among the countries which have ordered ships from German yards. To carry out all these orders would not be difficult, but there is a great shortage of steel, especially rolled plate, and so the terms of delivery can not always be fulfilled. A further obstacle in shipbuilding is the scarcity of diesel engines, which can be delivered only under difficulties. Both these facts are caused not by an insufficient capacity in the plants, but by the shortage of coal and raw materials. Some yards and factories quite recently had to dismiss some of their workers. The yards engaged the workers only a few months ago and there is plenty of work.

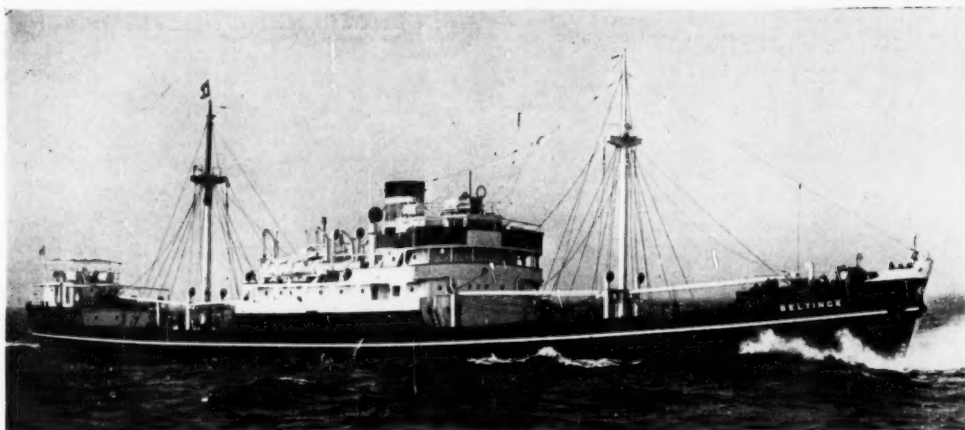
The Smaller Yards

Remarkable as it seems, however, the fact is that even some smaller yards are beginning to build big vessels, although they have to suffer more under the shortage of steel than the large yards, which have old ties with the heavy industries. The reason for this change is the lack of orders for inland water traffic and inshore fisheries. So the yards previously occupied in building small craft and river vessels have applied for orders for coastal and seagoing ships, and since the larger yards prefer to employ their capacity in very large vessels, some contracts were immediately signed with yards new to the building of medium-sized seagoing vessels. The following smaller yards are of some importance: (1) The Nobiskrug-Werft at Rendsburg (Kiel Canal) which has, among other vessels up to 4,500 tons d.w., orders for four motorships of about 1,500 tons gross each, 2,625 tons d.w. and a service speed of 16 knots. These vessels are to be built for the United Baltic Corporation, Ltd.; (2) The Eisflether Werft, Elsfleth/Weser, which has on order ships up to 1,000 tons d.w.; and (3) The Mützelfeldt-Werft, Cuxhaven, which is building a refrigerated cargo ship of 1,300 tons.

Some of the smaller Hamburg yards are also notable for having on order nothing but coasters and small harbour crafts, because the inland traffic on the upper River Elbe has come to a standstill on account of the "Iron Curtain." So the yard of Ottensener Eisenwerke A.G. is building ships up to 2,800 tons d.w., G. Renck, jr. K.G., at Hamburg-Harburg, ships up to 2,000 tons gross, and August Pahl, Hamburg-Finkenwärder, ships up to 1,400 tons. The three yards of W. Holst, J. J. Sietas and Heinrich Rancke, in Hamburg-Neuenfelds, are also building ships up to 1,200 tons d.w.



Profile and general arrangement of the steamship "Beltinge," built by Wm. Gray & Co., Ltd., for Constants (South Wales), Ltd.



THE CARGO STEAMSHIP "BELTINGE"

FIRST OF THREE BULK CARRIERS BUILT BY GRAY'S FOR CONSTANTS

THE GREAT majority of cargo ships built for British owners since the war have been shelterdeck vessels not unlike the wartime 10,000 tons deadweight standard design, except in choice of machinery and service speed, indicating the continued trend towards larger sizes in the evolution of the economic tramp. There has been a feeling for some time, however, which has frequently found expression in *THE SHIPPING WORLD*, that there was a need for smaller ships better fitted to carry the heavier bulk cargoes, that is, "deadweight" rather than "cubic" cargoes, and it is therefore interesting to examine the design of the single-screw steamship *Beltinge*, the first of three similar ships ordered from William Gray & Co., Ltd., by Constants (South Wales), Ltd.

This vessel completed trials and was handed over to the owners on October 12, and was followed by the *Garlinge* on November 30. The third vessel is due for completion during 1952. These ships have been built under the supervision of Constants, naval architects, of London, to a design specially adapted to the carriage of coal, ore, phosphates, and all kinds of timber cargoes, based on the owners' experience of more than 25 years in these trades.

The principal particulars of the *Beltinge* are as follows:—

Length overall	340 ft.
Length between perpendiculars	320 ft.
Breadth, extreme	46 ft. 6 in.
Breadth, moulded	46 ft. 4 in.
Depth moulded to upper deck	24 ft. 3½ in.
Loaded draught, mean	20 ft. 6 in.
Corresponding deadweight	4,628 tons
Gross tonnage	2,979 tons
Cargo capacity (grain)	207,000 cu. ft.
Water ballast capacity	975 tons
Oil fuel capacity	530 tons
Fresh water capacity	100 tons
Propelling machinery: Triple expansion steam engines with single screw	
Loaded service speed	10.5 knots

As a result of the long experience already mentioned in the carriage of high density cargoes, the owners' specification called for solid floors on all frames, with double bottom tank top plating and deck stringers and plating of increased thickness. The tank and tunnel tops themselves are covered with permanently fitted sheathing to minimise grab damage, while the tunnels and all air and other piping in the holds are protected by portable steel plating. The hatchway coamings are of specially strong design, the tops being level with the bulwark tops. The hatchway beams, designed to give increased strength for timber cargoes, are held in

cast steel slides on the inside of the coamings. The wooden hatch covers are protected by Cock's open-end hands.

The ship is of the single-deck type with short poop, bridge and fore-castle erections, of which the bridge and fore-castle are largely tonnage exempted spaces. The poop contains accommodation for seamen and firemen as well as the steering gear compartment. There are four large holds, of lengths between 52 ft. and 62 ft. 6 in. Oil fuel is carried in a deep tank forward of the machinery space, in wing tanks abreast the boilers, and alternately with water ballast in the double bottom in this region only. All other double-bottom tanks are for water ballast only, except for two tanks in way of the engines, these containing domestic and feed water. The fore and after peaks and after peak extension are water ballast tanks. The stem is raked and of rounded plate construction above the waterline. The cruiser stern is of orthodox design, and the rudder is of the double-plate streamlined type. Superstructures include the officers' deckhouse on the bridge with captain's and hospital houses on the boat deck, the navigating house above and a petty officers' house on the poop.

Six 5-ton derricks are fitted, Nos. 1 and 4 holds each being served by one derrick and the other two holds each by two derricks. These are operated by six 7 in. by 10 in. Clarke, Chapman winches. A further 7 in. by 10 in. winch by these makers, fitted on the poop deck, is used for warping. The steam windlass is an Emerson Walker unit. A Donkin steam steering gear of the Wilson Pirrie type is fitted with telemotor control. The domestic refrigerating plant has been supplied by J. & E. Hall, Ltd., and the mechanical ventilating system by Thermotank, Ltd. Steam radiators provide cabin heating, while as the ship may spend time in tropical climates, extensive awnings are fitted over all accommodation. Two 26-ft. wooden lifeboats, one of these being fitted with a motor, are carried in mechanical davits of the crescent type. A 15-ft. jolly boat is arranged under one davit on the starboard side of the boat deck. A comprehensive system of wireless telegraphy with direction-finder and echo-sounder, has been supplied. There are telephones between bridge and engine room and bridge and poop.

The deck, engineroom and radio officers, except the chief officer, are accommodated in the bridge deck-house, which also contains catering staff rooms and

messrooms and dining saloon for all persons on board. The dining saloon is designed to combine smoke room facilities. It may be noted that though all messing spaces are amidships in a position convenient to the galley, the crew have a separate common or recreation room in the poop adjacent to their own cabins. This arrangement seems to combine the need for centralised catering facilities with privacy for the crew's recreation away from officers' accommodation. The seamen and firemen are berthed in two-berth rooms with single rooms for the donkeymen and carpenter in the poop and a single room for the bosun in the poop deck-house. The captain's suite, comprising day, bed and bath rooms, together with the chief officer's and pilot's room, are arranged in the forward boat deckhouse, the smaller house aft on the boat deck containing a single-bed hospital.

The propelling machinery comprises one triple-expansion steam engine with cylinders of 20, 35 and 31 in. diameter and 39 in. stroke, with two oil-fired boilers each 13 ft. by 11 ft. 6 in., all constructed by the Central Marine Engine Works of the shipbuilders. The engine has the builder's drop-type valves on the H.P. and M.P. cylinders. The boilers operate under forced draught and with superheat. Progressive speed trials under loaded conditions were held on the Newbiggin measured mile, during which the ship exceeded the contract speed of 10½ knots.

Diesel Tugs for Colombian Rivers

On the Magdalena River, in Colombia, diesel-powered tunnel-stern "pusher type" river boats are rapidly replacing the old sternwheelers. During the past few years river operators have come to recognise the advantages of this new equipment. The new river tugs have ranged from 40-ft. single-screw vessels of 100 h.p. to triple-screw 65-ft. vessels of 750 h.p. Even the largest of these is hardly remarkable for its size, but it is noteworthy that this amount of power is built into a boat which, when fueled and ready for operation, draws only 3 ft. of water. This power in a vessel of light enough draught to operate successfully during the dry season and yet sturdy enough to stand up under continuous operation requires skilful planning and building. At 3-ft. draught these boats can operate the full navigable length of the Magdalena River (560 miles) all the year round, whereas the old heavy sternwheelers were often laid up for months and sometimes stranded on sandbars for long periods.

The Union Industrial y Astilleros Barranquilla is a modern shipyard located at the mouth of the Magdalena River. Last year it built four large triple-screw tugs and twenty 400 to 500-ton barges. At present six additional tugs and ten barges are under construction. The Barranquilla shipyard, after its reorganisation in 1945, was put under the management of Todd Shipyards Corporation. The *Santa Rita* is typical of the tugs now being used on the Magdalena. Designed and built by Union Industrial y Astilleros Barranquilla for Señor Martín Vázquez P., it was delivered in November 1950. It is a triple-screw tunnel-stern vessel of welded steel construction, with a length of 65 ft., a beam of 25 ft. 6 in., a depth at sides of 5 ft. 5 in. and a draught, with fuel, of 3 ft. It is propelled by three diesel engines, each developing 150 h.p. at 1,000 r.p.m., and turning four-bladed cast steel propellers through 1.96:1 reverse and reduction gears. It has a designed speed with tow of 10 m.p.h. in still water, on a fuel consumption of 28 gallons of diesel oil per hour. Accommodation is provided for a crew of 23. The vessel is licensed to handle tows of up to four barges, loaded with a maximum of 1,080 metric tons of cargo upstream and 1,280 metric tons downstream. This means a maximum weight of two (barges and cargo) comes to about 1,500 metric tons upstream and 1,700 metric tons downstream.

RECENT contracts for Vi-Spring Products, Ltd., include the supply of 1,335 "Vito" mattresses for the Dutch liner *Johan Van Oldenbarnevelt* and 874 "Vi-Spring" mattresses for the *Empire Brent*.

A FISHING VESSEL recently launched at Seattle, U.S.A., is fitted with a Lister (CD) 8 h.p. diesel engine for auxiliary power. This engine drives a 2 kW generator and the fire and bilge pumps, and will also provide the necessary power for a refrigeration plant to be installed later.

RECENT TECHNICAL DEVELOPMENTS

Götaverken Tanker Load Calculator

An electrically operated load distribution calculator has been produced by Götaverken A/B, Gothenburg, under the trade name of "Lodicator." It was designed by Mr. Lennart Swenson, an assistant naval architect at the Götaverken shipyard, and patents have been applied for in all maritime countries. The Lodicator, which is illustrated on this page, is in effect an electric calculating machine. It is fitted with a number of knobs, each corresponding to one of the cargo spaces on board, and graduated in tons. The machine is set by turning each knob to correspond with the number of tons of cargo in, or intended to be in, each cargo space. It is then possible to read on a dial if the distribution stands within the limits of safe trim which have been set, or not. The instrument must, of course, be initially adapted to suit the strength requirements of every individual ship. It enables officers to calculate in a few minutes how the cargo should be distributed in the different tanks in order to avoid excessive longitudinal stresses. This operation can



The "Lodicator"

take place before the cargo is loaded. The use of the Lodicator will also be beneficial when judging the new load distribution situation when a tanker has unloaded part of its cargo before proceeding to another port. Calculations of this kind previously have required much time and study, and it is the common practice of officers to rely mainly on their own experience and general rules when the cargo is distributed in the ship. The dimensions of tankers are increasing steadily, as is the number of tanks in the ship, factors which have increased the complication of load distribution calculations. The new Lodicator was first installed in the motor tanker *Margaret Onstad*, completed in July for Skibs A/S Aise, of Oslo. Three other tankers have already been supplied with the new instrument, and it is intended that all tankers delivered by Götaverken in future will be similarly equipped.

New Emulsion Paint

International Paints, Ltd., are marketing a new emulsion paint called "Interlight" which has some interesting properties. It contains no natural drying oils and it is therefore unaffected by alkalis. Consequently it may be applied to new plaster without fear of saponification once it has reasonably dried out. Although it is thinned with water "Interlight" has oil paint durability and may be applied to a wide variety of surfaces—wood, plaster, plaster board, hardboard, asbestos sheeting and so on. It may also be applied over metal that has been previously painted. In addition to being resistant to alkalis, it is also unaffected by normal acids. It does not putrefy and is resistant to fungus growths, aliphatic hydrocarbons, vegetable oils or animal fats. It has an attractive and extremely durable surface, which makes it suitable for interior decoration.



Survey Launch "Research"

Built by Thornycroft for Port of Bristol Authority

A SURVEY LAUNCH for the Port of Bristol Authority has been constructed by John I. Thornycroft & Co., Ltd., at Hampton-on-Thames, and has completed successful trials. The boat, which is named *Research*, is 53 ft. in length with a beam of 12 ft., and draws 3 ft. 9 in. The hull is of normal round bilge form, with a raked stem and canoe stern. Mahogany is employed for the planking, which is of carvel construction on closely spaced steamed oak timbers. Below water the hull is sheathed with Muntz metal, and this is carried up to a level 4 in. above the water line.

The launch is to be employed mainly for surveying and recording the movement of sand and mud banks in the port of Bristol area. For this purpose she is fitted with a Kelvin-Hughes echo sounder, Type MS21A. This set, which is installed in the wheelhouse, gives readings to a depth of 540 ft. with a maximum accuracy of 3 in. Its transmitting and receiving tanks are fitted to metal plates let in to the skin planking. It is operated from a 36-volts supply. Hand sounding can also be used, and a leadman's platform is fitted for this purpose on the starboard side of the forecabin.

In general, surveying is to be carried out from the wheelhouse, which is in the centre of the boat and is fitted with large glass screens all round. Two hatches are fitted in the deckhead, so that if necessary the surveyor can stand on a small platform with his head and shoulders protruding through the deckhead to take observations outside. An interesting accessory is a long reel of wire, which is mounted on bearers on the foredeck. This is employed when it is required to plot a position near the shore with particular

accuracy. One end of the wire is anchored on shore, and it is then paid out to the required distance, when a single bearing serves to fix the position of the boat.

The accommodation is arranged to allow the vessel to be used on occasions by the Docks Committee for port inspections. There is a large saloon aft, which may be entered by a ladder from the quarter deck. This is fitted with cushioned locker seats and nesting tables. There is a hinged skylight, and windows are fitted in the trunk. Forward of the saloon is a lobby, with a toilet to starboard and a small galley to port, leading through the engine room to the wheelhouse. This latter is at deck level, and has beneath it a surveyor's store. Further forward, the forecabin contains the crew's quarters, with locker seats fitted with mattresses. There is ample cupboard space, and a washing basin and toilet are fitted at the fore end.

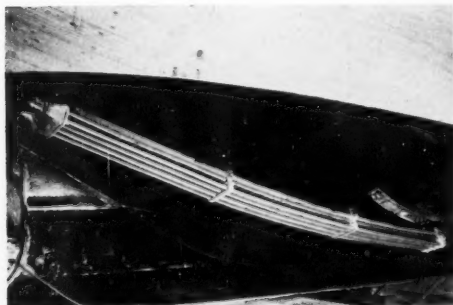
Machinery Arrangement

The machinery consists of two Thornycroft RTR 6 (Ricardo) diesel engines. These engines normally develop a maximum of 65 b.h.p. each at 2,250 r.p.m., but in this case have been set to develop some 55 b.h.p. each at 2,100 r.p.m., giving the boat a maximum speed of nine knots. They drive twin propellers through 2:1 reverse-reduction gearing of the oil operated type, supplied by the Self-Changing Gear Company.

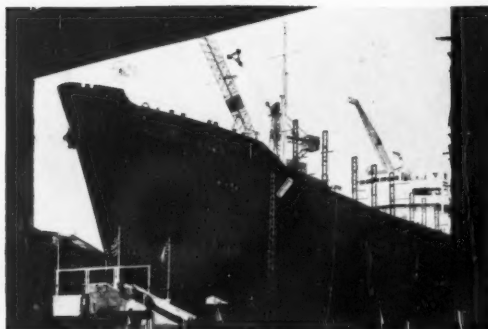
The engines are fitted with Thornycroft patent combined clutch and throttle controls. With this system there is a single lever on each gear which controls both ahead and astern motion and engine speed. This ensures that the engine is throttled down before the clutches are operated. In the *Research*, the controls are taken to a dual telegraph-type transmitter, giving very flexible control, which is mounted in the wheelhouse alongside the wheel. When both engines are to be moved together, only one hand is necessary for operation of the telegraphs, allowing the helmsman to continue steering at the same time.

The vessel will have to operate in sand-laden water, and the stern tubes are fitted with sand-excluding glands. In addition, external heat exchangers are fitted. With these, a closed circuit cooling system is employed, and the fresh water is led through tubes outside the hull, which are cooled by direct contact with the sea. No salt water pump is thus required.

These external heat exchangers, one of which is illustrated (left), have been fitted by Thornycroft's for a number of years with complete success. Some have been in service on the Thames for three years, and a tube has never yet had to be replaced. The heat exchangers are always mounted close to the keel, where they are well shielded in the event of the craft grounding. Each consists of eight copper tubes 7 ft. 6 in. long, mounted in rubber in gun-metal headers. The whole installation is 3 in. wide, and protrudes 2 in. The tubes are paralalled in pairs, so that the cooling water flows the length of the exchanger four times before being returned to the engine. In the *Research* there are two, one for each engine, mounted either side of the keel about amidships.



A Thornycroft external heat exchanger in position outside the hull



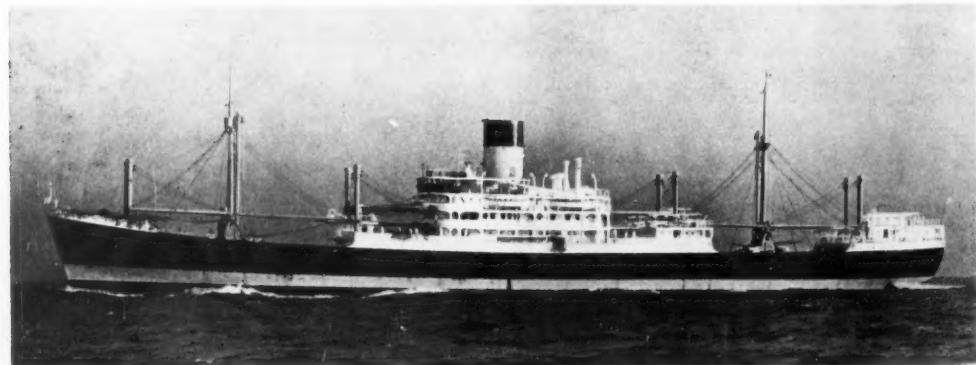
Launch of the "Clutha River"

The launch took place on November 29 from the Hebburn-on-Tyne yard of R. & W. Hawthorn, Leslie & Co., Ltd., of the single-screw motor tanker *Clutha River*, building to the order of the British Empire Steam Navigation Co., Ltd. The christening ceremony was performed by Miss Angela Warwick, daughter of Mr. C. W. Warwick, a director of the British Empire Steam Navigation Company. She is accompanied in the picture reproduced above by (from left to right) Mr. H. B. Robin Rowell (chairman of the shipbuilders), Mrs. C. W. Warwick, Sir Philip Johnson (managing director of the shipbuilders), Lady Johnson, Mr. C. W. Warwick, and Mr. Peter Warwick. The *Clutha River* will carry a deadweight of about 18,000 tons. Her principal dimensions are about 557 ft. length o.a., 70 ft. breadth moulded and 39 ft. 6 in. depth moulded to upper deck. She will be propelled by a Doxford-type diesel engine having six cylinders, to be supplied by the shipbuilders.



Fruit Carrier for Israel

A sister ship of the *Rimon* completed earlier this year, the single-screw fruit carrier *Tamar* has been delivered to the Zim Israel Navigation Co., Ltd., of Haifa, by N.V. Scheepswerf en Machinefabrik "De Merwede," v/h van Vliet & Co., Hardinxveld. She is a vessel of 2,372 tons gross and has dimensions of 352 ft. 7 in. length o.a., 326 ft. 5 in. b.p., 46 ft. 7 in. breadth moulded, 28 ft. 3 in. depth to shelter deck and 20 ft. 2 in. depth to tweendeck. Her deadweight capacity is 4,062 tons when loaded to summer freeboard. The *Tamar* is of the closed shelterdeck type and has three main cargo holds and tween-decks. For cargo handling purposes there are, one 15-ton derrick, two 3-ton and eight 5-ton derricks served by electric winches. There is accommodation for 12 passengers. The propelling machinery has been supplied by Maschinenfabrik Augsburg-Nürnberg A.G., of Augsburg, and consists of a 10-cylinder two-stroke single-acting diesel engine. The engine develops 3,000 b.h.p. and provides the ship with a loaded speed of 14 knots.



Motor Cargo Liner for Alfred Holt

The single-screw motor cargo liner *Atreus* has been completed at the Naval Yard, Walker, of Vickers-Armstrongs, Ltd., for the China Mutual Steam Navigation Co., Ltd. (Alfred Holt & Co.). Of about 8,300 tons gross, the *Atreus* has a length o.a. of 487 ft., breadth moulded 62 ft., and a depth moulded of 35 ft. 3 in. A deadweight of about 9,000 tons is carried on a draught of 28 ft. A service speed of 15½ knots is maintained by a 7-cylinder two-stroke single-acting B. & W.-type diesel engine. The engine was supplied by John G. Kincaid & Co., Ltd., and develops 7,000 to 7,600 b.h.p. in service.

NEW CONTRACTS

Yards in Great Britain and Northern Ireland

Shipowners	No. of Ships	Type	Approximate Tonnages		Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
			Gross	Deadweight						
A/S Tanktransport, Tonsberg	1	Tanker	—	18,000	—	—	Diesel	—	—	Sir James Laing
General S.N. Co.	1	Cargo	—	1,400	260 o.a. x 40 x 15	13	Sulzer diesel	—	—	S. P. Austin
Scottish owner	1	Cargo	—	1,400	—	—	Diesel	—	—	Ailsa S.B. Fleming & Ferguson
Clyde Nav. Trust	1	Bucket dredger	—	—	—	—	—	—	—	—
Commonwealth and Foreign Yards										
Sigval Bergsen & Co., Stavanger	1	Tanker*	—	32,000	—	—	—	—	—	Eriksbergs M.V., Gothenburg
A/S Oddero, Kristiansand	1	Cargo	—	7,000	—	—	Diesel	—	—	Kristiansands M.V.
Ingvald Bjorneboe's Rederi A/S, Kristiansand	1	Cargo	—	3,550	—	—	Steam	—	—	Trondhjems M.V.
Jakob Mische, Bergen	1	Cargo	—	700	—	—	Diesel	—	—	Seutelvans M.V., Fredrikstad
Haugesund owner	1	Cargo	—	750	—	—	Diesel	—	—	Seutelvans M.V.
Soc. Mazout Transports, Paris	1	Tanker	—	27,000	—	—	—	—	—	Ch. et Atel de St. Nazaire (Penhoet)
French owner	1	Cargo	—	7,700	—	—	—	—	—	Atel et Ch. de la Loire, St. Nazaire
French owner	1	Cargo	—	1,800	—	—	—	—	—	Atel et Ch. de Bretagne, Nantes
Norwegian owners	2	Cargo	—	920 (each)	—	11.5	Diesel	750 (each)	—	Travewerft Ebschner & Gubler, Lubeck
Hamburger Export-Import Grosshandlung Lufz, Maack & Co., Hamburg	1	Cargo	500	850	213.3	11.5	M.A.K. diesel	750	—	Rolandwerft, Bremen
Reederei Thoring & Co., Hamburg	1	Cattle carrier	—	500	—	—	—	—	—	Nobiskrug Werft, Rendsburg
Hans Sverningens, Copenhagen; A. E. Sorensen, Svendborg; Rederiet Elin S., Svendborg (1 each)	3	Cargo	500 (each)	—	—	—	Diesel	—	—	Svendborg Skibs.
S.A. Soc. Navale Caennaise	2	Cargo	—	1,650 (each)	—	—	—	—	—	S.A. des Anciens Ch. Dubigeon, Nantes

* This order replaces a contract previously arranged for a tanker of 18,000 tons d.w.

LAUNCHES

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnages		Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
				Gross	Deadweight						
Nov. —	Manchester Ship Canal Co.	M.S.C. Quarry	Tug	160	—	95 o.a. x 24 x 12	—	Tw.-scr., 4-cyl. diesel	1,200	Crossley Bros.	Henry Robb
Nov. 26	Esso Pet. Co.	Esso Cambridge (679)	Tank barge	131	—	—	—	—	—	—	Richard Dunston, Hestle Clelands (Successors)
Nov. 29	Oil Storage Co. of Apapa	Oscar 2 (170) and Oscar 8 (176)	Tank barges	95 (each)	—	—	—	Non-propelled	—	—	—
Nov. 29	Alfran Transport Co.	Suhail (439)	Tanker	15,700	24,400	589 o.a. and 560 b.p. x 80 x 42.25	14	6-cyl., 2-str. Doxford diesel	6,600	R. & W. Hawthorn, Leslie Shipbuilders	Furness S.B.
Nov. 29	Royal Mail Lines	Ebro* (1442)	Cargo liner	5,500	—	415 b.p. x 58.5 x 38.33	—	6-cyl., 2-str. 8. & VV. diesel	—	—	Harland & Wolff, Govan
Nov. 30	Yacimientos Petroliferos Fiscales, Buenos Aires	Eva Peron (1206)	Tanker	12,000	18,000	565.75 o.a. and 530 b.p. x 71 x 39	—	Dbie.-red geared turbine	6,000	Shipbuilders	Cannell Laird
Nov. 30	Scottish Tanker Co.	Scottish Lion (1811)	Tanker	11,250	16,250	547 o.a. and 515 b.p. x 69.5 x 38.375	—	6-cyl., 2-str. Doxford diesel	6,400	Wallsend Slipway & Eng.	Swan, Hunter & Wigham Richardson, Wallsend Short Bros.
Dec. 1	United British S.S. Co.	Barrington Court (513)	Cargo	6,000	10,000	445 b.p. x 59.75 x 29.08	—	6-cyl., 4-str. Harland-B. & W. diesel	3,300	John G. Kincaid	—
Dec. 3	Comissao de Aquisicao de Petroleiros	Ceara (101)	Tanker	11,000	16,500	510 b.p. x 69.5 x 37.25	—	5-cyl. Doxford diesel	5,600	Barclay, Curle	Blythwood S.B.
Dec. 4	Wm. Robertson Shipowners	Olivine	Cargo	—	1,700	—	11.5	7-cyl. diesel	—	British Polar Engines	Ailsa S.B.
Dec. 4	Per Lodding, Oslo	Sydhav (1064)	Tanker	11,000	16,000	—	—	Diesel	—	—	Lithgows

* Corrected and additional details of a launch reported in last week's SHIPPING WORLD.

TRIAL TRIPS

Yards in Great Britain and Northern Ireland

Date	Shipowners	Ship's Name and/or Yard No.	Type	Approximate Tonnages		Dimensions (ft.)	Speed (knots)	Propelling Machinery	Total h.p.	Engine Builders	Shipbuilders
				Gross	Deadweight						
Nov. —	Constantine Shipping Co.	Copewood	Cargo	1,272	1,675	214.5 b.p. x 35.33 x 16	—	4-cyl., 2-str. diesel	640	British Polar Engines	Burntisland
Nov. 20	Consolidated Fisheries	Vanessa Ann	Trawler	—	—	112 x 22 x 12	—	British Polar diesel	—	—	Richards Ironworks
Nov. 28	Admiralty	Beskidy (333) (to be named Surf Pioneer)*	Tanker	7,600	11,000	445 b.p. x 60.5 x 34	13.5	4-cyl. Doxford diesel	4,250	N.E. Marine	Bartram & Sons
Nov. 28	British Electricity Authority	Debford	"Flat-iron" collier	1,782	2,700	257 l.w.l. x 39.5 x 18.5	11	Tr.-exp. reheat steam	—	George Clark (1938)	S. P. Austin
Nov. 30	Constants (S. Wales)	Garlinge (1252)	Cargo	2,980	4,628	340 o.a. x 46.5 x 24.29	—	Tr.-exp. steam	—	Shipbuilders	Wm. Gray
Dec. 1	Furness, Withy & Co.	Pacific Reliance (124)	Cargo liner	9,300	10,500	497 x 63.16 x 41	15.5	Geared turbine	7,700	Parsons Marine	Vickers-Armstrongs, Walker

* Ordered by the Gdynia-America Shipping Lines, Ltd., the Beskidy was taken over by the Admiralty in July of this year.



MR. T. EUSTACE SMITH, the second vice-president of the Shipbuilding Employers' Federation for the ensuing year, has been joint managing director of Smith's Dock Co., Ltd., since 1948. He served his apprenticeship with R. & W. Hawthorn, Leslie & Co., Ltd., and completed it with Smith's Dock Company, which he joined in 1923. He became a director of the company in 1928 and was appointed assistant managing director in 1945. Mr. Smith is a member of the Institution of Naval Architects and of the North East Coast Institution of Engineers and Shipbuilders.



MR. J. GRANT, the newly appointed manager of the Shell Haven oil refinery of the Shell Petroleum Co., Ltd., has for the past year been assistant manager of the Shell refinery at Stanlow. Mr. Grant started his career as an oil chemist and joined Shell in 1927, spending his first eleven years' service in the United States. In 1938 he was transferred to Suez as assistant refinery manager, returning to England in 1940. He later became superintendent at the Stanlow refinery. In 1944 he went to Trinidad as an assistant refinery manager and was later appointed assistant general manager in that area.

MARITIME NEWS IN BRIEF

From Correspondents at Home and Overseas

LORD LEATHERS, Secretary of State for the Coordination of Transport, Fuel and Power, and Sir Frank S. Alexander, a former chairman of the Baltic Exchange and former Lord Mayor of London, have been admitted to the honorary membership of the Baltic Exchange, the former in recognition of his services to the country and the latter for his services to the Exchange and to the City of London. Sir Frank Alexander has been a member of the Baltic Exchange since 1905, and was chairman from 1939 to 1946. Lord Leathers was elected a member in 1947.

THE States Marine Corporation, of New York, has acquired a controlling interest in the South African Marine Corporation, Ltd., of Cape Town, by increasing its holding in the line from 40 per cent to 60 per cent. A South African subsidiary of Clan Line Steamers, Ltd., has also acquired an interest in the company, leaving only a minor interest still in other South African hands.

THE Minister of Fuel and Power has appointed Sir Ewart Smith (technical director of Imperial Chemical Industries, Ltd.) and Captain (E) W. Gregson, R.N.R. (director of Babcock & Wilcox, Ltd.) to be members of the Scientific Advisory Council which was set up in 1948 to advise him on the scientific aspect of his statutory duties.

TO MARK the centenary of the Stag Line, Ltd., a tax-free capital distribution of 3d. a share is to be made to shareholders. The firm was founded in 1846 when Joseph Robinson built the 182-ton sailing ship *Stag*.

THE Baltic Exchange will be closed from 2 p.m., Monday, December 24, until 10 a.m., Thursday, December 27, and from 2 p.m., Monday December 31, until 10 a.m., Wednesday, January 2, 1952.

CAPTAIN Sir Ernest Thornton the death of whom was announced in last week's SHIPPING WORLD, was from February 1941 until he retired in 1947 Commodore of the Union-Castle Line fleet. Captain Thornton joined the line in 1906. During the First World War he served as a Lieutenant, R.N.R., and was in H.M.S. *Lion* at the battles of the Heligoland Bight, Dogger Bank and Jutland. He was first appointed to a command in 1929. Throughout the last war he commanded the liner *Capetown Castle*, and was knighted in 1944.

ALTERATIONS are being made to the passenger accommodation of three Moore-McCormack liners without interrupting their regular services from New York to Buenos Aires. The 32 staterooms on B deck of each vessel are being altered to provide a toilet and shower with each room. Most of the work is carried out while the liners—*Brazil*, *Argentina* and *Uruguay*—are at sea.

REES MACE MARINE, through the Export Department of Pye, have recently equipped two police launches for the Gold Coast with V.H.F. radio telephones. Other export shipments of marine Pye V.H.F. radio will include port equipment for Accra and V.H.F. sets for Government launches in Hong Kong.

THE Engineering Centre, Glasgow, has now opened a catalogue library which contains the literature of more than 3,000 firms, and also a complete set of British Standards. Manufacturers who have not included the Centre's name on their mailing lists for publicity matter, are invited to do so.

CAPTAIN A. MARSDEN has been elected chairman of the Shipwrecked Fishermen and Mariners' Royal Benevolent Society in succession to the late Admiral Sir Michael Hodges. Captain C. St. G. Glasson, Elder Brother of Trinity House, has been elected deputy chairman of the society.

THE Papua Legislative Council at Port Moresby has passed a bill to control the sale, transfer or mortgage of any ship owned in the territory to people or interests outside the Commonwealth of Australia.

MR. M. H. L. LEWIS has been co-opted to the board of executive directors of Crompton Parkinson, Ltd., for a period of six months. Since April 1950 he has been assistant to the Works Director (South).

THE death has occurred of Mr. H. M. Mann, who since 1944 was managing director of Whites Shipyard (Southampton), Ltd.

OWING to rising costs of fuel and other services, the Continental North Atlantic Westbound Freight Conference have notified shippers that freight rates will be increased by 10 per cent as from February 1 next. The increase will apply to all cargo moving from Rotterdam, Amsterdam, Antwerp, Bremen and Hamburg to New York, Boston, Philadelphia, Baltimore, Norfolk and Newport News.

FIVE elephants were shipped at Southampton last week in the P. & O. liner *Soudan*. An unusual export, they are destined finally for Borneo, where they will be employed in the teak forests. Owing to the shortage of trained elephants, restrictions have been imposed on their export from India and Burma.

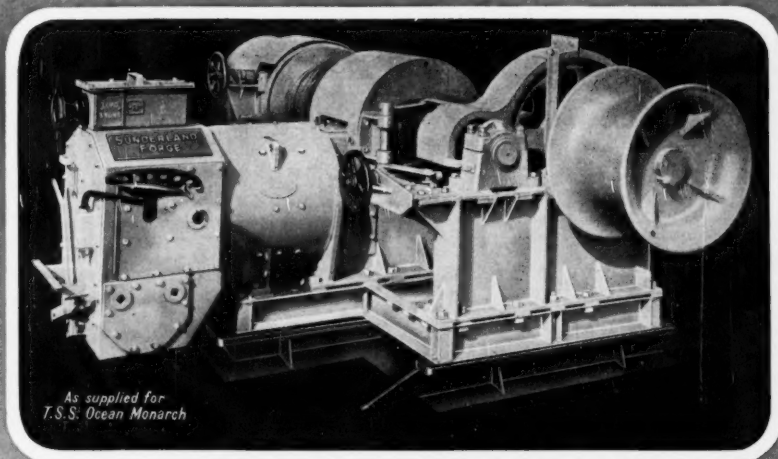
ONE of the first launches on the Tyne in the New Year will be the 2,500-ton cable ship *Stanley Angren*, being built by Swan, Hunter & Wigham Richardson, Ltd., Walker, for Cable & Wireless. This will be the 22nd cable ship built at the yard.

MR. G. F. TEMPLE, formerly sales manager of British Polar Engines, Ltd., has now joined Modern Wheel Drive, Ltd., and its associated company, Oil-operated Gears & Transmissions, Ltd., as sales manager.

ORDERS have been received by Bulls Metal & Melloid Co., Ltd., for ships' windows for the two new P. & O. passenger liners to be built by Harland & Wolff, Ltd., and John Brown, Ltd.

MR. J. C. CAMPBELL, chief London representative of Keith Blackman, Ltd., has retired after 50 years' service with the firm. He is succeeded by Mr. J. C. Auld, who has been with the company since 1914.

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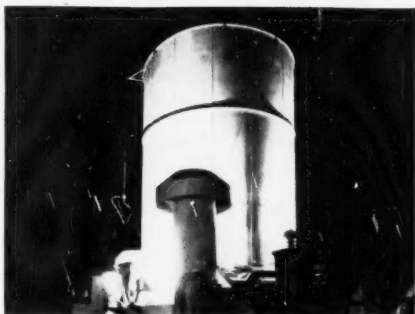
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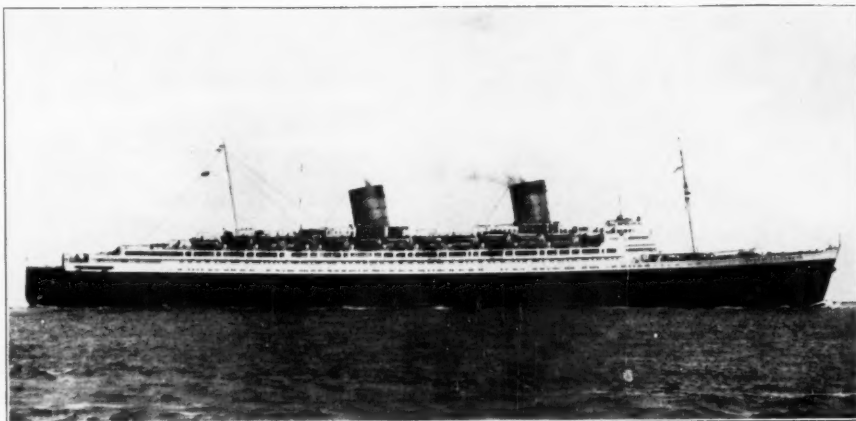
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